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ABSTRACT

Designed as a how-to guide in initiating, developing, and operating an adult basic education program in industry, referred to as Cooperative Adult Basic Education (CABE), this handbook is based on experience gained during the development of the in-plant adult basic education program at Planters, the Planter's Employee Training Program (PET). The term "trade-related curriculum" is defined in the first section. Provided next is a rationale for developing a trade-related curriculum, followed by a discussion of who should be involved in developing it. The next two sections contain guidelines for identifying and incorporating trade terminology and trade math. Utilizing the trade-related curriculum is the subject of the final section. A glossary and references follow. A total of 26 appendixes include such items as student charts and record sheets, word lists, abbreviations/symbols, signs, math drills and tests, and trade terminology. (MN)

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# HANDBOOK FOR

# TRADE-RELATED CURRICULUM DEVELOPMENT

# IN A

# COOPERATIVE ADULT BASIC EDUCATION PROGRAM IN INDUSTRY

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Suffolk City Schools
Suffolk, Virginia

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A Division of Standard Brands Incorporated
Suffolk, Virginia

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June, 1981

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## PREFACE

The Suffolk City School Board is dedicated to providing educational opportunities to all its youth first, and then to its adult citizens who may need and want further training and/or education. The Board and its staff feel especially excited and pleased to provide the administrative machinery for the continuation of the Planters Employee Training Project 310. The purpose is a cooperative one between the local State supported agency, the City Schools, and private industry, namely Planters Peanuts, A Division of Standard Brands Incorporated. This program has been very beneficial to all agencies and individuals involved, and the Suffolk City Schools are proud to be a part of it. We hope our program can serve as a model for other agencies and industries.

Forrest L. Frazier
Superintendent
Suffolk City Schools

The Planters Employee Training Program is the result of Planters Peanuts and Local 26 of the Distributive Workers of America (DWA) agreeing during the 1977 contract negotiations that a training program was needed and that Planters would sponsor such a program.

The actual program, better know as PET, is the result of Planters Peanuts, Local 26 DWA, Suffolk City Schools, and the Virginia Department of Education joining together and developing a program that would (1) fill the needed educational requirements of our employees, (2) help them perform their jobs properly, (3) give them the potential to progress to more skilled, higher paying jobs, (4) assist them to become better citizens, and (5) give them the personal satisfaction that comes with learning.

We at Planters are proud of the accomplishments of our employees and trust they will continue using our PET program.

Emmett E. Holland
Personnel Services Manager
Planters Peanuts

## ACKNOWLEDGMENTS

This handbook is a product of the project entitled "Cooperative Adult Basic Education Curriculum Development and Technical Assistance," funded under Section 310 of the Adult Education Act and administered by the Adult Education Service, Virginia Department of Education. The project was implemented by the Suffolk City Schools, Suffolk, Virginia, in association with the Cooperative Adult Basic Education — Planters Employee Training (CABE/PET) Program.

The cooperating parties of the project provided willingly and unselfishly the support, guidance, and expertise needed to compile this handbook. Appreciation for their contributions is extended to the cooperating parties and their representatives, including:

Virginia Adult Education Service

Suffolk City Schools

Planters Peanuts,
A Division of Standard Brands Incorporated

Local 26, District 65, United Auto Workers

Special appreciation is expressed to personnel at Planters, especially the department heads and supervisors, who assisted in the identification of the trade terminology and trade math, and to the teachers and participants in the Planters Employee Training Program.

Mimi Edge Felton
Program Director
Planters Employee Training Program

## INTRODUCTION

In June 1979, the **Handbook for the Development of a Cooperative Adult Basic Education Program in Industry** (Felton, 1979) was printed and ready for distribution. It was the "how to" in initiating, developing, and operating an Adult Basic Education Program in industry, referred to as Cooperative Adult Basic Education (CABE). It was based on experience gained during the one and a half years of development of the in-plant Adult Basic Education program at Planters, the Planters Employee Training Program (PET).

During this period of operation, the program director recognized a need to develop a trade-related curriculum. The workers participating in the Planters Employee Training Program require reading and mathematics to help them on the job in completing forms, in participating in training and safety programs, and in making job changes as a result of technological advancements. Many of these workers were hired at a time when the basic skills involved in reading, writing, and computing were not required. However, they now are finding themselves in a frustrating position caused by their lack of education and new job responsibilities. The program director felt it only logical, practical, and beneficial to incorporate those job-related skills with the literacy skills cited in the **Adult Basic Education Curriculum and Resource Guide** (Department of Education, Commonwealth of Virginia, 1977). Workers equipped with those skills necessary to perform their jobs are more satisfied employees. The industry, in turn, benefits from more competent workers.

Perceiving the need for a trade-related curriculum, the program director began identifying the trade terminology and trade math common to the working environment at Planters. Once those items were identified, she sought ways to incorporate and utilize the trade terminology and trade math in the Adult Basic Education Curriculum.

The steps outlined and described in this handbook, **Handbook for Trade-Related Curriculum Development in a Cooperative Adult Basic Education Program in Industry,** are the actual steps taken by the program director in her attempt to identify, to incorporate, and to utilize the trade terminology and trade math. In other words, this handbook is the "how to" in the development of a trade-related curriculum. Although the trade terminology and trade math common to one industry will differ from that of another industry, the steps followed in identifying these items, incorporating them and using them should be similar in all industries. It is hoped that by following the steps outlined and described in this handbook, a trade-related curriculum for use in other in-plant Adult Basic Education programs can be developed with facility. Inquiries concerning this handbook and the **Handbook for the Development of a Cooperative Adult Basic Education Program in Industry** (Felton, 1979) should be sent to:

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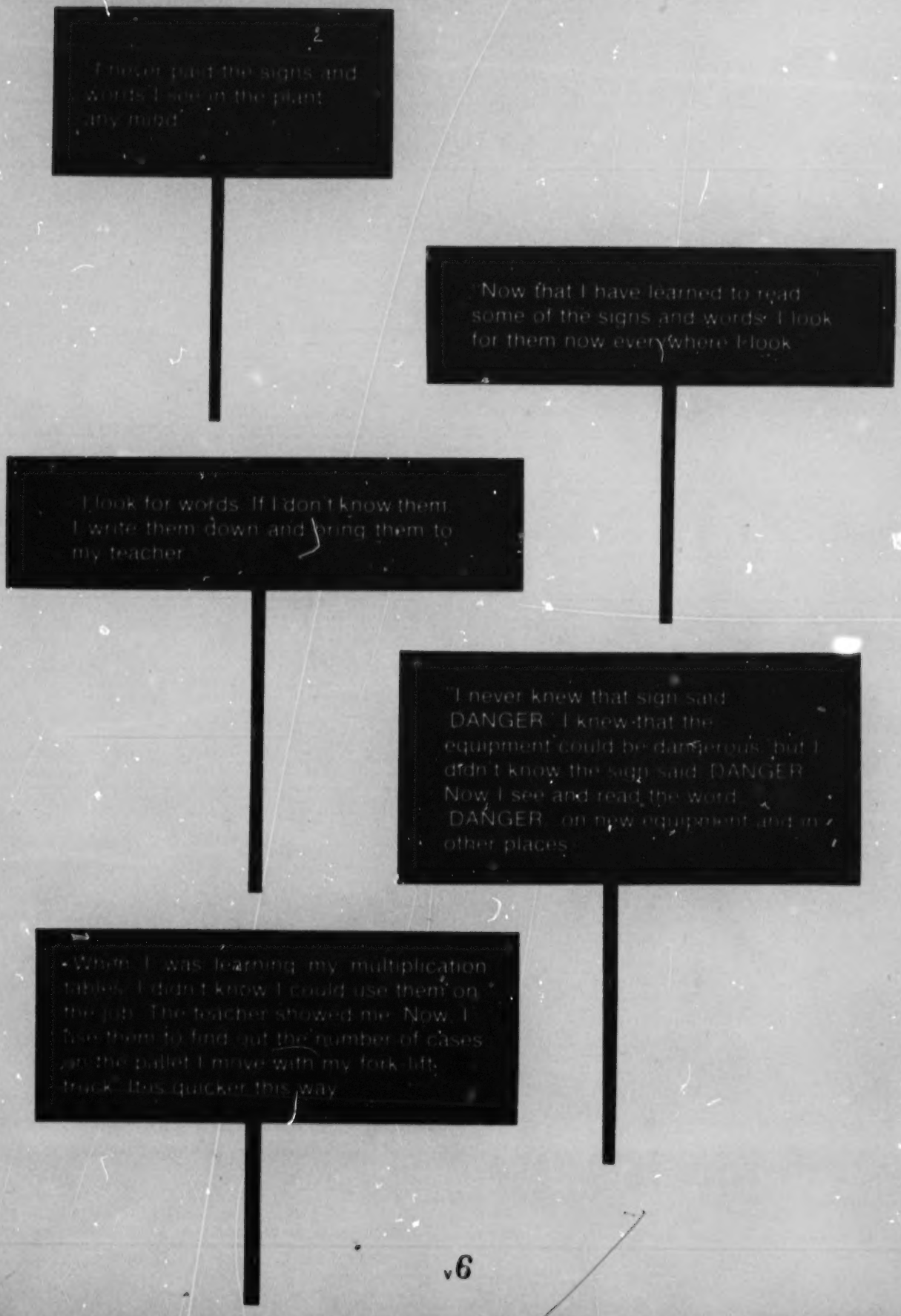
I recognize the signs and words I see in the plant and my mind.
Now that I have learned to read some of the signs and words I look for them now everywhere I look.
I look for words. If I don't know them I write them down and bring them to my teacher.
"I never knew that sign said DANGER. I knew that the equipment could be dangerous, but I didn't know the sign said DANGER. Now I see and read the word DANGER on new equipment and in other places.
When I was learning my multiplication tables I didn't know I could use them on the job. The teacher showed me. Now I use them to find out the number of cases on the pallet I move with my fork-lift truck. It's quicker this way.

# TABLE OF CONTENTS

PREFACE ..... ii
ACKNOWLEDGMENTS ..... iii
INTRODUCTION ..... iv

## HANDBOOK FOR
## TRADE-RELATED CURRICULUM DEVELOPMENT
## IN A
## COOPERATIVE ADULT BASIC EDUCATION PROGRAM IN INDUSTRY

I. WHAT IS A TRADE-RELATED CURRICULUM? ..... 1

II. WHY SHOULD A TRADE-RELATED CURRICULUM BE DEVELOPED? ..... 5

III. WHO SHOULD DEVELOP THE TRADE-RELATED CURRICULUM? ..... 9

IV. HOW TO **IDENTIFY** THE TRADE TERMINOLOGY AND TRADE MATH ..... 13

V. HOW TO **INCORPORATE** THE TRADE TERMINOLOGY AND TRADE MATH ..... 21

VI. HOW TO **UTILIZE** THE TRADE-RELATED CURRICULUM ..... 29

GLOSSARY ..... 47
REFERENCES ..... 51
APPENDICES ..... 55

# I. WHAT IS A TRADE-RELATED CURRICULUM?

# I. WHAT IS A TRADE-RELATED CURRICULUM?

Curriculum may be defined as a list of sequential skills, coordinated with appropriate materials and methods to teach these skills. An Adult Basic Education (ABE) curriculum includes the sequential skills, materials, and methods used in a program teaching reading, writing, arithmetic, and survival skills to adults.

A trade-related curriculum provides special instruction in reading, writing, and arithmetic that may be used on the job and that is necessary for survival in the working environment. A trade-related curriculum can (1) address specific, immediate job needs and/or (2) be integrated with the regular ABE curriculum, depending on individual and program objectives.

An explanation of a trade-related curriculum designed to meet a specific, immediate job need follows:

> A worker is referred to the program to learn to record numbers accurately on a form. The program director observes and evaluates the job performed by this employee. The director then designs a curriculum to prepare the worker to perform that task, based on the educational entry level of that particular worker. The program director may prescribe in this situation that the worker (1) learn to read and write numbers, (2) learn to count in sequence, (3) learn to record numbers in a straight column, and (4) practice recording numbers on the actual form. Consequently, the worker has learned a specific task that he or she will use immediately on his or her job and that is unique to that job description. Unless time, interest, and needs warrant instruction in other areas, the curriculum is limited only to those lessons concerned with teaching the filling out of the specified form.

For the long-term student (that is, one regularly enrolled in the in-plant ABE program), there is a trade-related curriculum that meets the needs of the majority of workers, regardless of their job descriptions. This trade-related curriculum consists of the trade words and trade math most commonly seen and used throughout the plant.

An explanation of a trade-related curriculum, designed for general use with most of the workers follows:

> A worker enrolls in the in-plant ABE program just for the sake of learning to read, to write, and to cipher. He or she cannot read and is not required to do so on his or her job. While learning the initial consonant sounds, the worker is taught trade words beginning with the same initial consonant sounds. For example, the word "DANGER" as seen on many signs around the plant, can be used to teach or reinforce the initial consonant sound of "d." While learning multiplication tables, the worker can be given word problems of a job-related nature involving the multiplication tables. A worker who transports pallets on a fork-lift truck can be shown that a pallet six (6) layers high and with eight (8) cases to a layer has forty-eight (48) cases on it.

In each instance, the worker has learned either a basic reading or a basic math skill relevant to his or her working environment. Instruction has been a component of a trade-related curriculum.

## II. WHY SHOULD A TRADE-RELATED CURRICULUM BE DEVELOPED?

## II. WHY SHOULD A TRADE-RELATED CURRICULUM BE DEVELOPED?

As stated in the Preface, a trade-related curriculum is an integral part of an in-plant ABE program. It makes the ABE program beneficial to the worker and to the industry. The need for a trade-related curriculum may be described in relation to certain job related factors.

### SAFETY

A trade-related curriculum includes safety words as seen on signs in the plant. The workers learn the words seen on the signs while learning phonics. For example, the workers learn the word, "CAUTION," when learning the initial consonant sound of "C." They have included in their vocabulary a word necessary for survival in their working environment, making them more cautious workers.

### WORKER EFFICIENCY AND SATISFACTION

Words and math skills used in completing forms are a part of the curriculum. Once the workers have learned the trade words and math skills, they can complete the forms with more accuracy and with less frustration. They do not have to obtain help from their supervisors or fellow workers to complete their job assignments. As a result the industry has more efficient, competent, and contented employees.

### MOTIVATION

Adult learners are motivated to learn if they can apply immediately newly-acquired skills. Knowing that the multiplication tables they are learning can be used on their jobs provides incentive to learn the tables. Then, actually using them on their job brings satisfaction.

The benefits of a trade-related curriculum to both the worker and the industry are difficult to measure. However, experience at Planters has indicated that the worker (1) is less frustrated; (2) is more content; (3) is more independent; (4) attempts new tasks; (5) is motivated to learn and anxious to apply newly-acquired skills; (6) is a safer, more qualified worker; and (7) is capable of participating in training/apprenticeship programs and safety programs.

A trade-related curriculum equips the worker with the tools necessary for good job performance. This can only mean "profit" to the industry and "satisfaction" to the worker.

## III. WHO SHOULD DEVELOP THE TRADE-RELATED CURRICULUM?

## III WHO SHOULD DEVELOP THE TRADE RELATED CURRICULUM?

The program director, teacher(s), supervisors, and workers all should be involved in the development of the trade-related curriculum. Each can provide input valuable in making it suitable and beneficail to the worker and the industry.

However, the chief responsibility lies with the program director. As innumerated in the **Handbook for the Development of a Cooperative Adult Basic Education Program in Industry** (Felton, 1979), the program director must "(1) be familiar with adult education in general; (2) have some experience in teaching adults; (3) be enthusiastic, strong, and willing to try new ideas; (4) be flexible; (5) enjoy and be capable of working with, working for, and working under the supervision of many people; and (6) be honest and sincere." (Felton, P.13) In addition the program director must be familiar with the industry and its workers. These qualities come only with time and experience, serving as the program director in the in-plant ABE program.

Trade-related curriculum development should begin after the program has been developed and in operation for at least one year. During this time, the program director becomes acquainted with the industry and its workers, and the industry and workers become acquainted with him or her. As a result, a relation of confidence, trust, and cooperation is established.

Although the program director has become somewhat familiar with the industry, he or she must rely on supervisors in identifying the trade terminology and math in its daily use and application. Furthermore, the supervisors know the areas in which the workers are deficient. In other words, they know what the workers need to know. (Identification of trade terminology and math is discussed in detail in Section IV of this handbook.)

The teachers also should be involved in trade-related curriculum development since they will be the ones actually to utilize curriculum materials. Their understanding of the trade terminology and math can not be overemphasized. Through their involvement, the teachers will improve their understanding of the curriculum and will use it with more facility and confidence. (Utilization of the trade-related curriculum is discussed in detail in Section VI of this handbook.)

Workers can contribute to curriculum development. Often,they see and describe their jobs from a different perspective from that of supervisors. Their trade terminology (jargon) also may be unlike that of supervisors. The program director should observe and listen to the workers while helping to solve their problems. Like all undereducated adults, they have learned to compensate for and cover up their inability to perform basic reading and math skills in some unique ways. Awareness of these ways helps not only in identifying the terminology and math, but also in designing the curriculum. The program director will find that worker involvement will continue if he or she is observant and attentive throughout instruction.

The program director, with the assistance of teachers, supervisors, and workers, should plan on taking a year to develop the trade-related curriculum. Involvement of others is necessary, but is conditional on their having and taking the time to provide input. The program director needs time to analyze and synthesize the accumulated information for utilization. Despite the fact that trade-related curriculum development is a tedious project, it is a worthwhile endeavor.

## IV. HOW TO IDENTIFY THE TRADE TERMINOLOGY AND TRADE MATH

A. Obtain an organizational chart listing all departments within the industry.

B. Identify which departments have employees who lack the basic skills in reading and/or math and who would be prospective participants in the in-plant ABE program.

C. Interview a supervisor from each department.

D. Take a tour of the department with the supervisor.

E. Organize information obtained by making a folder for each department.

F. Compile trade terminology and trade math lists from the department folders.

## IV. HOW TO IDENTIFY THE TRADE TERMINOLOGY AND TRADE MATH

A. Obtain an organizational chart listing all departments within the industry.

The Organizational Chart sometimes is referred to as the Table of Organization (T.O.). It can be obtained from one of the following: Director of Operations, Director of Human Resources, Director of Employees Relations, or Director of Personnel. This information quite often is confidential and is not readily released. An explanation of the purpose of requesting the information is helpful. Management's trust in the program director and awareness of the objectives and goals of the in-plant ABE program are contributing factors in obtaining this information.

B. Identify which departments have employees who lack the basic skills in reading and/or math and who would be prospective participants in the in-plant ABE program.

Some departments employ only highly skilled workers with at least a high school education. It would not be appropriate to include these departments and their workers when identifying the trade terminology and trade math.

To find out which departments have workers with less than a high school education, the program director should consult representatives from various levels of responsibilities in the industry. Frequently top management will have a different view than the worker. However, both provide valuable insight. The program director should not overlook the "old timer" of the industry. He or she knows the industry and its operation better than anyone through experience gained over many years of service.

When consulting these individuals, the program director wants to find out: (1) the name of the departments (as referred to by both top management and the workers,) (2) location of each department, and (3) jobs requiring little, if any, education and performed by those workers who may be prospective participants in the program.

From this information, the program director can determine where to begin in his or her attempt to identify the trade terminology and math.

C. Interview a supervisor from each department.

1. Explain the in-plant ABE program.

The program director should not assume that everyone knows about the program, especially if there is a turnover in supervision. He or she should give a brief explanation on the program, including (1) objectives, (2) plan of operation, (3) screening and selection (4) attendance regulations, (5) program format and curriculum, and (6) evaluation.

## IV. HOW TO IDENTIFY THE TRADE TERMINOLOGY AND TRADE MATH

2. Explain the purpose of identifying the trade terminology and trade math.

The program director should establish from the very beginning that he or she is not trying to train the worker to perform a specific job function. He or she is only trying to equip the worker with the essentials (basic reading and math skills) necessary for good job performance.

The program director should stress that a trade-related curriculum can be beneficial not only to the worker, but also to the supervisor.

The program director can take this opportunity to solicit suggestions for the program in general and to encourage supervisory involvement.

3. Ask for a list of all job titles or classifications within the department.

The program director should have the supervisor (1) describe each job classification in his or her department; (2) tell which jobs require any reading, writing, or math skills; (3) identify which jobs are performed by workers who would be possible candidates for the program (those likely to have less than a high school education and/or those hired without the basic skills of reading, writing, and arithmetic as prerequisites); and (4) supply any forms or paper work, including math skills, completed by the worker and used on the job.

D. Take a tour of the department with the supervisor.

While touring the department, the program director should observe and copy all signs and printed words as seen on equipment, boxes, cases, packaging, etc. He or she should have the supervisor identify, by title, the jobs performed and then observe them.

E. Organize information obtained from each department by making a folder for each department.

Each department folder should contain the following:

1) a chart with a listing of jobs; reading, writing, and math skills used on the job; and reference to any specific forms or specific math skills used on the job.
2) a list of words found on forms, boxes, cartons, shippers, packaging, etc.
3) a list of abbreviations from forms, boxes, cartons, shippers, packaging, etc.
4) a list of signs seen within that department.

See Appendices A and B for an example of the above mentioned charts on which to record the information.

F. Compile the following lists by combining the lists from the department folders:

1) general trade words list
2) list of abbreviations/symbols
3) list of signs
4) list of math skills

These four lists contain the words, abbreviations/symbols, signs and math skills seen and used frequently in all departments and by the majority of workers.

The program director at Planters found that it was best to have a combined list of words, a combined list of abbreviations/symbols, a combined list of signs, and a combined list of math skills instead of a separate list for each department. There were (1) carry-over and duplication of terminology and math from one department to another, (2) workers performing jobs of a similar nature in each department, and (3) workers being transferred from one department to another with some cross-training taking place.

Having organized the four lists, the program director is ready to incorporate the trade terminology and math into the regular ABE curriculum.

Note: The program director will find it necessary periodically to revise these lists. Important trade words and math skills are identified mainly by the workers during utilization of the trade-related curriculum. The program director will want to incorporate these in the existing curriculum.

## V. HOW TO INCORPORATE THE TRADE TERMINOLGY AND TRADE MATH

A. Alphabetize words in general trade words list.

B. Categorize words from general trade words list according to word attack skills as introduced in **The New Streamlined English Series** (Laubach, Kirk, & Laubach, 1974).

C. Rank words from the general trade words list from least to most difficult.

D. Arrange list of abbreviations/symbols in order of difficulty.

E. Arrange list of signs in order of difficulty.

F. Make a Trade Terminology Kit containing the three sections: (1) general trade words, (2) abbreviations/ symbols, and (3) signs.

G. Make a Trade Math Kit in which to incorporate identified trade math skills.

## V HOW TO INCORPORATE THE TRADE TERMINOLGY AND TRADE MATH

Note: A partial listing of Adult Basic Education (ABE) curriculum materials and instructional equipment used in the Planters Employee Training Program is included as Appendix Z. These are the most frequently used materials and equipment into which the trade terminology and trade math skills are integrated. However, trade terminology and trade math can be applied and adapted to most any set of ABE curriculum materials and instructional equipment of a similar nature.

A. Alphabetize words in general trade words list. (List of general trade words compiled in Section IV, F of this handbook.)

Having the general trade words in alphabetical order from the start will facilitate the various steps of incorporation. See Appendix C for an example of alphabetized trade words list used in the P.E.T. Program.

B. Categorize words from general trade words list according to word attack skills as introduced in **The New Streamlined English Series** (Laubach et al., 1974).

Words from general trade words list can be categorized following any ABE reading program. Trade words can be used to teach an unlimited number of word attack skills.

1) Initial consonant sounds
2) Short vowel sounds (word patterns containing)
3) Consonant blends -sh, ch, th
4) Sound of er, ir, ur
5) Sound of ar
6) Long vowel sounds (word patterns containing
7) Other sounds
8) Number of syllables
9) Compound words
10) Other consonant blends

See Appendices D,E,F,G, and H for an example of categorized words lists of trade words used in the P.E.T. Program.

C. Rank words from the general trade words list from the least to the most difficult.

In order to rank general trade words from the least to the most difficult, the program director should consider (1) the number of syllables in the word, (2) the regularity of phonetical sound pattern, (3) the concreteness of the word to the student, and (4) the frequency of use of the word. **TUTOR** (Colvin & Root, 1972) is an excellent resource.

See Appendix I for a partial listing of general trade words from Planters, ranked from least to most difficult. The partial listing includes examples from the first twenty (20) words with comments beside each word to justify rank of word.

D. Arrange list of abbreviations/symbols in order of difficulty, beginning with the least difficult. (List of abbreviations/symbols compiled in Section IV,F of this handbook.)

In order to arrange list of signs in order of difficulty, the program director should consider (1) the number of syllables of the word the abbreviation/symbol represents, (2) the concreteness of the word and (3) the frequency of use of the abbreviation/symbol.

E. Arrange a list of signs in order of difficulty, beginning with the least difficult. (List of signs compiled in Section IV, F of this handbook.)

In order to arrange list of signs in order of difficulty, the program director should consider (1) the number of word(s) in the sign, (2) the number of syllables in the word(s) the sign represents, (3) how often the sign is seen in the plant, and (4) the impact of the sign on the worker (a sign reading "DANGER" would have more impact than a sign reading "REJECTED").

F. Make a Trade Terminology Kit containing the three sections: (1) general trade words, (2) abbreviations/symbols, and (3) signs.

See Appendix W for an illustration of the Trade Terminology Kit.

The **general trade words** section of the Trade Terminolgy Kit contains the following:

1) Instructions for use of the general trade words section of the kit (Appendix J)
2) Pre-Test/Post-Test Cards. (Appendix K) Cards are laminated to reduce wear from handling.
3) General Trade Words List - Student Record Sheet with words ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult. (Appendix L)
4) Teacher Reference Cards. (Appendices C,D,E F,G, and H) Teacher Reference Cards are laminated.
5) Language Master Cards of each general trade word (with the same number as indicated on the Student Record Sheet). The trade word is printed in all capital letters on the front of the Language Master Card and in lower case letters on the back of the card.

Note: See Appendix M for information on the Language Master System.

20

The **abbreviations/symbols** section of the Trade Terminology Kit contains the following:

1) Instructions for use of the abbreviations/ symbols section of the kit (Appendix N)
2) Pre-Test/Post-Test Card. (Appendix O) Card is laminated.
3) Abbreviations/Symbols List - Student Record Sheet with abbreviations/symbols ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult. (Appendix P)
4) Language Master Cards of each abbreviation/ symbol (with the same number as indicated on the Student Record Sheet). The abbreviation/ symbol is printed on the front of the Language Master Card and the word it represents is printed on the back of the card.

The **signs** section of the Trade Terminology Kit contains the following:

1) Instructions for use of the signs section of the kit. (Appendix Q)
2) Pre-Test/Post-Test Cards. (Appendix R) Cards are laminated.
3) Signs List-Student Record Sheet with signs ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult. (Appendix S)
4) Envelopes containing Language Master Card(s) of each sign (with the same number as indicated on the Student Record Sheet). Language Master Cards also have the same number (in lower right corner) as that appearing on the Student Record Sheet and sequential letters of the alphabet indicating the correct reading order (as that of the sign). Some signs are too long to print in one Language Master Card. (Appendix T)

G. Make a Trade Math Kit in which to incorporate identified trade math skills. (List of trade math skills compiled in Section IV,F of this handbook.)

See Appendix X for an illustration of the Trade Math Kit.

Most of the trade math skills identified at Planters were contingent on knowing the basic mathematical processes of addition; subtraction; multiplication; and division of whole numbers, fractions, and decimals. With this in mind, the program director chose to teach the basic math skills and then to incorporate any specific trade math skills as they coincided with the basic instruction.

## V. HOW TO INCORPORATE THE TRADE TERMINOLGY AND TRADE MATH

The four major sections of the Trade Math Kit are as follows:

1) Whole Numbers - addition, substraction, multiplication, and division
2) Fractions - addition, subtraction, multiplication, and division
3) Decimals - addition, subtraction, multiplication, and division
4) Trade Math Skills

Some of the identified trade math skills are used by a limited number of workers and would not benefit all the workers/students. Therefore, those skills are taught only to workers who need the skill. Instruction in trade math skills is provided after the fundamentals are acquired.

Included in the sections on whole numbers, fractions, and decimals are sequential drill sheets. These drill sheets can be teacher-made or commercial. The program director should consider the size of the numbers and the space provided for student computation, especially when dealing with older students. The sequential basic math series, **No Frill Math Drill** (Holtz, S. & Holtz, G., 1979) is used in the P.E.T. Program.

At the front of the sections on whole numbers, fractions, and decimals are (1) content sheets which describe and locate drill sheets (Appendix U) and (2) answer keys for those drill sheets within that section.

The section on trade math skills contains lesson plans and drill sheets on specific math skills used by the workers. The contents sheet at the front of this section should include (1) file number, (2) skill description, (3) list of workers needing skill, and (4) basic math skills needed to perform skill. (Appendix V)

New skills and appropriate lessons can be added to this section as they are identified and developed.

Some of the materials used in making the Trade Terminology Kit and the Trade Math Kit are listed below:

**Trade Terminology Kit:**

1. Blank Language Master Card Sets
2. Filing tabs
3. Expanding file
4. Envelopes
5. Storage box(es)
6. Report covers
7. Laminating materials
8. Cardboard dividers

**Trade Math Kit:**

1. Sequential basic math spirit duplicating books
2. File folders
3. Filing tabs
4. Assorted color marking pens
5. Heavy-duty box(es)
6. Cardboard dividers

## VI HOW TO UTILIZE THE TRADE RELATED CURRICULUM

A. Conduct a preservice for the teachers.

B. Make a Trade-Related Folder for each student.

C. Utilize the Trade Terminology Kit with each student.

D. Utilize Trade Math Kit with each student.

## VI. HOW TO UTILIZE THE TRADE-RELATED CURRICULUM

A. Conduct a preservice for the teachers.

1. Take the teachers on a tour of the plant.

It is helpful for the teachers to visit the departments from which the workers/students come. This will aid the teachers in their understanding of the trade terminology and math.

2. Explain the department folders. (See Section IV, E of this handbook.)

The department folders further acquaint the teachers with the industry, the job descriptions within each department and the types of skills needed by the workers.

The program director should give the teachers adequate time to assimilate the above information.

3. Explain the methods used in identifying the trade terminology and math. (See Section IV of this handbook.)

4. Explain how words were ranked and categorized for incorporation into the regular ABE curriculum. (See Section V of this handbook.)

5. Explain the Language Master System of Learning and demonstrate its use. (Appendix M)

Other audiovisual equipment can be used that provides similar instruction as that of the Language Master.

Allow the teachers time to practice using the audio-visual equipment.

6. Provide time for the teachers to become familiar with **The New Streamlined English Series** (Laubach et al., 1974) in which the trade terminology is incorporated.

Other reading programs can be used in place of **The New Streamlined English Series**. Teachers should become familiar with them at this time.

7. Introduce **TUTOR** (Colvin & Root, 1972) to teachers, giving them time to study and practice the techniques described.

**TUTOR** provides the teachers with techniques used in the teaching of reading, which are excellent for teaching and incorporating the trade terminology.

8. Explain the Trade Terminology Kit.

The program director should explain and discuss with the teachers the following:

1) Instructions for use of the kit and all its components. (Instructions are kept with the kit for ready-reference.)
2) Lists of words, abbreviations/symbols, and signs to make sure that the teachers understand the meanings or use of these in their relationship to industry.

9. Explain the Trade Math Kit.

The program director should explain the format of the Trade Math Kit. The teachers should be given time actually to read and work each trade math skill. At this time the teachers can ask questions concerning those lessons they do not understand.

B. Make a Trade-Related Folder for each student.

The Trade – Related Folder should contain the following:

1) General Trade Words List-Student Record Sheet (Appendix L)
2) Abbreviations/Symbols List - Student Record Sheet (Appendix P)
3) Signs List - Student Record Sheet (Appendix S)
4) Lined tablet for student's work
5) Three envelopes in which to keep cards on which words, abbreviations/symbols, and signs are printed for student use and drill
6) Lessons in trade math skills, as completed, can be kept in this folder or with other math materials

C. Utilize Trade Terminology Kit with each student in the following manner.

Note: Any one of the three sections (general trade words, abbreviations/symbols, or signs) can be introduced first. They can be taught separately or simultaneously. This will depend on the teacher's discretion, based on student need, interest, or capability.

These instructions are the same as those found in the Instructions for Use of Kit (Appendices J,N, and Q), located with the Trade Terminology Kit. Instructions printed here are accompanied by pertinent comments.

## VI. HOW TO UTILIZE THE TRADE-RELATED CURRICULUM

1. Follow these steps to teach **general trade words.**

Step 1:
Administer Pre-Test.

Give the student the Pre-Test/Post-Test Cards (Appendix K) from which to read the general trade words. If the student knows the word, place a check beside it on the Student Record Sheet (Appendix L). If the student does not know the word, leave the space blank. If the student becomes frustrated or misses 5-10 words consecutively, cease testing or allow the student to look through words and identify any others he or she might know. Record the number of known trade words in the Pre-Test Score blank at the top of the Student Record Sheet.

Note: When checking for word recognition, it is wise to check for word meaning. Some students can read/pronounce the words but have no idea as to what the words mean. Check the word only if it can be pronounced and understood.

Step 2:
Explain General Trade Words List.

The General Trade Words List is a list of words seen or used around the plant. These words appear on boxes, cases, labels, shippers, forms, vouchers, etc.. They are words that would be helpful for any worker to know despite his or her job description.

Step 3:
Negotiate a learning contract.

Note: The use of a learning contract is optional. If it is used, it should be very informal. For additional information and supportive literature on contract learning, consult the following: Berte, 1975; Knowles, 1976; and Knowles, 1978.

Negotiate a learning contract with the student to begin learning the unknown trade words (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due due. Any number of words, preferrably no less than three or more than six at any given time, can be selected. A contract due date is established and recorded on the Student Record Sheet (Appendix L). On the contract due date the teacher checks to see if the student knows the word and a new contract is negotiated.

**Step 4:**
**Select trade words to be learned and contracted.**

Any **one** of the following methods of selection can be used.

1. Find out if the student reads or completes any forms while on the job. This can be done by (1) finding out from what department the student comes and what job he or she performs and then referring to that department folder and under that job description, (2) asking the worker to bring to class any forms he or she reads or completes on the job, or by (3) going to the department supervisor and obtaining the form. Locate and mark the words from the form on the Student Record Sheet (Appendix L). Beginning with the word(s) with the lowest numbers, contract three to six words to be learned during a given contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

2. Beginning with the first unknown word on the Student Record Sheet and proceeding in order down the sheet, contract three to six words to be learned during a contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

3. As the student is learning a particular word attack skill taught in the regular ABE reading program, refer the student to a group of trade words illustrating that word attack skill. Use the Teacher Reference cards (Appendices C,D,E,F,G and H) to locate the trade words teaching that skill and to find out the number of the Language Master Card on which the trade word appears. (Remember, the words with the lowest numbers are the least difficult to learn.)

   For example, if the student is learning the initial consonant sound of b, c, and d; choose a group of trade words beginning with these letters to reinforce the sound. If the student is learning about syllables, compound words, or forming plurals of words, use trade words as examples and for drill. Trade words selected in this manner can be contracted or can be used just as reinforcement of a skill.

**Step 5:**
**Teach trade words.**

Suggested methods of teaching the trade words are described below. Teachers are encouraged to try more than one method to discover which one(s) work best with a particular student. They also are encouraged to be creative in developing their own teaching techniques.

FIRST:

Take the student to the Language master. Demonstrate the use of the Language Master. Draw from the general trade words section of the Trade Terminology Kit the Language Master Cards of the words selected and/or contracted.

THEN:

Discuss each contracted word with the student.
- Where might the abbreviation/symbol be seen in the plant?
- Where is it found on a particular form?
- Can the student use it in an everyday situation outside the plant?

USING A VISUAL METHOD
[**TUTOR** (Colvin & Root, 1972, p. 24)]

1. Listen to the word on the instructor track of the Language Master Card.
2. Say the word, then say the word again recording voice on the student track of the Language Master Card.
3. Listen to the recorded word.
4. Take a picture of the letters of the word.
5. Close eyes and picture the word in your mind.
6. Open eyes and look at the word again; then say the word again.

USING A KINESTHETIC METHOD
[**TUTOR** (Colvin & Root, 1971, p. 24)]

1. Listen to the word on the instructor track of the Language Master Card.
2. Say the letters in the word reading them from the Language Master Card.
3. Print the word on paper.
4. Check to see if it is printed correctly.
5. Look at the word and say the word again.

LEVEL II STUDENTS ALSO CAN...

. . . learn to spell the word by printing the word six times.

. . . use the word in a sentence and print the sentence.

Step 6:
Check trade words contracted on contract due date.

On the contract due date, check to see if the student knows the contracted words. If the word is known, check the contract due date beside the word on the Student Record Sheet (Appendix L). If the word is not known, do not check the contract due date. Negotiate a new contract including the unknown words, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned words should be provided throughout the instructional phase of the program.

Step 7:
Administer Post-Test.

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the general trade words from the Pre-Test/Post-Test Cards (Appendix K). Record the number of known trade words in the Post-Test Score blank at the top of the Student Record Sheet (Appendix L). Compare Pre-Test and Post-Test scores to see how many trade words have been added to the trade vocabulary of the student.

2. Follow these steps to teach **abbreviations/symbols.**

Step 1:
Administer Pre-Test.

Give the student the Pre-Test/Post-Test Card (Appendix O) from which to read the abbreviations/symbols. If the student knows the abbreviation/symbol, place a check beside it on the Student Record Sheet (Appendix P). If the student does not know the abbreviation/symbol, leave the space blank. Record the number of known abbreviations/symbols in the Pre-Test Score blank at the top of the Student Record Sheet.

Note: When checking for abbreviation/symbol recognition, it is wise to ask the student what is meant by the word(s) the abbreviation/symbol represents.

Step 2:
Explain the terms, "abbreviations" and "symbols."

An abbreviation is a short form of a word. It takes up less space and can be written quickly. It is usually followed by a period. An abbreviation is written either in lower case letters or in all capital letters. Often two or more of the letters in the word are used to form the abbreviation.

For example: Virginia - Va. or VA. or VA
hour - hr. or HR. or HR
weight - wt. or WT. or WT

A symbol is something (a sign) that stands for or suggests something else, either a word or an idea. It takes up less space and can be written quickly.

For example: ¢ stands for cent/s
& stands for and
$ stands for dollar/s

**Step 3:**
**Negotiate a learning contract.**

Note: The use of a learning contract is optional. If it is used, it should be very informal. For additional information or supportive literature on contract learning, consult the following: Berte, 1975, Knowles, 1976; and Knowles, 1978.

Negotiate a learning contract with the student to begin learning the unknown abbreviations/symbols (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due date. Any number of abbreviations/symbols, preferrably no less than three or more than six at any given time, can be selected. A contract due date is established and recorded on the Student Record Sheet (Appendix P). On the contract due date, the teacher checks to see if the student knows the abbreviation/symbol, and a new contract is negotiated.

**Step 4:**
**Select abbreviations/symbols to be learned and contracted.**

Either **one** of the following methods of selection can be used.

1. Find out if the student reads or completes any forms while on the job. This can be done by (1) finding out from what department the student comes and what job he or she performs and then referring to that department folder under that job description, (2) asking the worker to bring to class any forms he or she reads or completes on the job, or by (3) going to the department supervisor and obtaining the forms. Locate and mark the abbreviations/symbols from the form on the Student Record Sheet (Appendix P).

Beginning with the abbreviations/symbols with the lowest numbers, contract three to six abbreviations/symbols to be learned during a given contract period. Establish a contract due date and record the date on the Student Record Sheet.

2. Beginning with the first unknown abbreviation/symbol on the Student Record Sheet and proceeding in order down the sheet, contract three to six abbreviation/symbols to be learned during a contract period. Establish a contract due date, and record the date beside each contracted abbreviation/symbol on the Student Record Sheet.

**Step 5:**
**Teach abbreviations/symbols.**

Suggested methods of teaching the abbreviations/symbols are described below. Teachers are encouraged to try more than one method to discover which one(s) work best with a particular student. They also are encouraged to be creative in developing their own teaching techniques.

FIRST:

Take the student to the Language Master. Demonstrate the use of the Language Master. Draw from the abbreviations/symbols section of the Trade Terminology Kit the Language Master Cards of the abbreviations/symbols selected and/or contracted.

THEN:

Discuss each contracted abbreviation/symbol with the student.

- Where might the abbreviation/symbol be seen in the plant?
- Where is it found on a particular form?
- Can the student use it in an everyday situation outside the plant?

USING A VISUAL METHOD
[**TUTOR** (Colvin & Root, 1972, p. 24)]

1. Listen to the word the abbreviation/symbol stands for on the Language Master Card while looking at the abbreviation/symbol.
2. Say the word the abbreviation/symbol stands for, then say again recording voice on the student track of the Language Master Card.

3. Listen to the recorded voice.
4. Take a picture of the letters or symbol of the abbreviation/symbol.
5. Close eyes and picture the abbreviation/symbol.
6. Open eyes and look at the abbreviation/symbol again; then say it again.

USING A KINESTHETIC METHOD
[**TUTOR** (Colvin & Root, 1972, p. 24)]

1. Listen to the abbreviation/symbol on the instructor track of the Language Master Card while looking at the abbreviation/symbol.
2. Print the abbreviation/symbol as seen on the Language Master Card on a sheet of paper.
3. Print the word the abbreviation/symbol stands for as seen on the back of the Language Master Card on paper.
4. Circle the letters in the word that are used in the abbreviation on paper, if applicable.
5. Print the abbreviation/symbol two times on paper.

FOR ADDITIONAL DRILL TRY . . .

. . . Making flash cards out of index cards for the contracted abbreviations/symbols. Put them in an envelope for the student to use for review.

. . . Designing a matching drill where abbreviations/symbols in one column are matched with the corresponding words in another column.

**Step 6:**
**Check abbreviations/symbols on contract due date.**

On the contract due date, check to see if the student knows the contracted abbreviations/symbols. If the abbreviation/symbol is known, check the contract due date beside the abbreviation/symbol on the Student Record Sheet (Appendix P). If the abbreviation/symbol is not known, do not check the contract due date. Negotiate a new contract including the unknown abbreviations/symbols, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned abbreviations/symbols should be provided throughout the instructional phase of the program.

**Step 7:**
**Administer Post-Test.**

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the abbreviations/symbols from the Pre-Test/Post-Test Card (Appendix O). Record the number of known abbreviations/symbols in the Post-Test Score blank at the top of the Student Record Sheet (Appendix P). Compare Pre-Test and Post-Test scores to see how many abbreviations/symbols have been added to the trade vocabulary of the student.

3. Follow these steps to teach **signs.**

**Step 1:**
**Administer Pre-Test.**

Give the student the Pre-Test/Post-Test Cards (Appendix R) from which to read the list of signs. If the student knows the sign, place a check beside it on the Student Record Sheet (Appendix S). If the student does not know the sign, leave the space blank. Record the number of known signs in the Pre-Test Score blank at the top of the Student Record Sheet.

**Step 2:**
**Explain Signs List.**

The Signs List is a list of signs as seen in the plant. The signs are found on the walls, doors, posts, machines, equipment, and in offices. The signs are in the plant for many reasons. First and foremost, signs are for safety. They warn the worker of danger. Signs give instructions and directions. Signs provide information about the product (its name, its weight, its contents, its usage). Signs tell what to do or what not to do with the product. Signs should be read and followed, not ignored.

**Step 3:**
**Negotiate a learning contract..**

Note: The use of a learning contract is optional. If it is used, it should be very informal. For additional information and supportive literature on contract learning, consult the following: Berte, 1975; Knowles, 1976; and Knowles, 1978.

Negotiate a learning contract with the student to begin learning unknown signs (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due date. Any number of signs, preferrably no less than three or more than six can be selected. A contract due date is established and recorded on the Student Record Sheet (Appendix S). On the contract due date the teacher checks to see if the student knows the sign and a new contract is negotiated.

**Step 4:**
**Select signs to be learned and contracted.**

Beginning with the first unknown sign on the Student Record Sheet (Appendix S) and proceeding in order down the sheet, contract three to six signs to be learned during a contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

**Step 5:**
**Teach signs.**

Suggested methods of teaching the signs are described below. Teachers are encouraged to try more than one method to discover which one(s) work best with a particular student. They also are encouraged to be creative in developing their own teaching techniques.

FIRST THE TEACHER SHOULD:

Print in large letters on a sheet of paper the word(s) in the signs to be learned leaving enough space underneath to place a small word card.

Print each word in a sign on a small card and also the number of the sign on the back of each card. The number is the same as that on the Student Record Sheet and on the sign envelope found in the Trade Terminology Kit.

Print the sign and its number on the outside of an envelope in which the small card(s) will be kept.

Take the student to the Language Master; demonstrate the use of the Language Master; and draw from the signs section of the Trade Terminology Kit the envelopes containing the Language Master Cards of the signs selected and/or contracted.

| | THEN THE STUDENT SHOULD: |
|---|---|
| | Listen to the word(s) of the sign in correct order on the instructor track of the Language Master Card, following sequential letters of the alphabet found next to number in bottom right corner of the Language Master Card. |
| | Say the word(s) of the sign, then say the word(s) again, recording voice on the student track of the Language Master Card. |
| | Listen to the recorded voice. |
| | Take a picture of the letters of each word of the sign. |
| | Close eyes and picture each word of the sign in his or her mind. |
| | Open eyes and look at the word(s) in the sign again; then, say word(s) of sign again, looking at the Language Master Card(s). |
| | Take small cards and say words. If there is more than one word to the sign, place small cards in correct order as sign is read. |
| | Place small card underneath the same word printed on paper. |
| | Read the word(s) of the sign again. Read the sign again. |
| | Print the word(s) of the sign on paper for additional reinforcement. Read again. |
| Step 6:<br>Check signs on contract due date. | On the contract due date, check to see if the student knows the contracted signs. If the sign is known, check the contract due date beside the sign on the Student Record Sheet (Appendix S). If the sign is not known, do not check the contract due date. Negotiate a new contract including the unknown signs, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned signs should be provided throughout the instructional phase of the program. |

**Step 7:**
**Administer Post-Test.**

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the signs from the Pre-Test/Post-Test Cards (Appendix R). Record the number of known signs in the Post-Test Score blank at the top of the Student Record Sheet (Appendix S). Compare Pre-Test and Post-Test Scores to see how many signs have been added to the sign vocabulary of the student.

**D. Utilize Trade Math Kit with each student in the following manner.**

Note: The Trade Math Kit is described and explained in Section V,G of this handbook.

**Step 1:**
**Identify math level of student.**

Determine the math level of the student as a part of general enrollment and testing procedures. Administer an informal test (Appendix Y), which will indicate in what basic math skills the student is deficient. Stop the student as soon as he or she begins having difficulty. Make note of math level in student records. Also, decide exactly where to start the student in the Trade Math Kit.

**Step 2:**
**Identify any specific trade math skills needed by the student.**

To identify specific math skills, if any, needed by the student (1) ask the student his or her job title and department, (2) consult the department folder and job description (explained in Section IV,E of this handbook), (3) ask the student to bring an example of forms completed on the job, and/or (4) refer to contents sheet at front of trade math section of Trade Math Kit (explained in Section V,G and Appendix V).

**Step 3:**
**Teach basic math skills to student and incorporate in instruction the trade math skills.**

If the student needs a specific trade math skill, make a note of it in the student's records. When fundamental skills necessary to perform the specified trade math skill are acquired, provide instruction as found in the trade math skills section of the Trade Math Kit.

Remember: The contents sheet (Appendix V) at the front of the trade math skills section indicates (1) the skill description, (2) the workers needing the skill, and (3) the fundamental skills needed to perform the trade math skill.

If the student does not need a specific trade math skill, provide instruction in only those general trade math skills needed by the majority of the workers. These general skills also are indicated on the contents sheet (Appendix V). These skills can be incorporated into the regular math instruction when and where appropriate.

Make every effort to relate basic math skills to an on-the-job situation. For example, when teaching multiplication, teach figuring a pay check; when teaching to count and write numbers, teach reading and recording numbers from a meter (case counter); when adding money, teach adding decimal numbers involving weights; etc.

# GLOSSARY

# GLOSSARY OF ANACRONYMS AND TERMS USED IN THIS HANDBOOK

**ABE** **Adult Basic Education**
Educational opportunities for adults whose literacy skills are below a ninth grade level is referred to as an Adult Basic Education.

**CABE** **Cooperative Adult Basic Education**
Cooperation between a state supported educational agency and private industry for programs to provide educational opportunities for adults is termed Cooperative Adult Basic Education.

**Level I** That level in Adult Basic Education comparable to grades one (1) through four (4) is considered Level I.

**Level II** That level in Adult Basic Education comparable to grades five (5) through eight (8) is considered Level II.

**PET** **Planters Employee Training**
The in-plant Adult Basic Education program located at Planters Peanuts, A Division of Standard Brands Incorporated, is called the Planters Employee Training Program.

**pallet** A wooden platform on which boxes are stacked and transported by a fork-lift truck is called a pallet.

# REFERENCES

# REFERENCES


Berte, N.R. Individualization and Contracting. In J.B. Lon Hefferlin, *New Directions for Higher Education* (Vol. 3, #2). San Francisco, California: Jossey-Bass Inc. Summer 1975.

Colvin, R.J. & Root, J.H. *TUTOR.* Syracuse, N.Y.: Literacy Volunteers of America, Inc., 1972.

*Adult Basic Education Curriculum and Resource Guide.* Richmond, Virginia: Department of Education, 1977.

Felton, M.E. *Handbook for the Development of a Cooperative Adult Basic Education Program in Industry.* Richmond, Virginia: Department of Education, 1979.

Holtz, S. & Holts, G. *No Frill Math Drill.* Paoli, Pennsylvania: Instructo/McGraw-Hill, 1979.

Knowles, M.S. Contract Learning. In C. Klevins, *Materials and Methods in Continuing Education.* New York: Klevins Publications, Inc., 1976.

Knowles, M.S. *The Adult Learner: A Neglected Science (2nd ed.).* Houston, Texas: Gulf Publishing Company, Book Division, 1978.

Laubach, F.C., Kirk, E.M., & Laubach, R.S. *The New Streamlined English Series.* Syracuse, N.Y.: New Readers Press, 1974.

# APPENDICES

# APPENDICES


Appendix A — Department Folder Chart ..... 59
Appendix B — Department Folder Chart ..... 61
Appendix C — General Trade Words List (in alphabetical order) ..... 63
Appendix D — Suggested Trade Words When Teaching Initial Consonant Sounds ..... 65
Appendix E — Suggested Trade Words When Teaching Word Patterns ..... 67
Appendix F — Suggested Trade Words When Teaching Consonant Blends ..... 69
Appendix G — Suggested Trade Words When Teaching the Sound of ER, IR, UR, AR ..... 71
Appendix H — Suggested Trade Words When Teaching Syllables ..... 73
Appendix I — Patial Listing of General Trade Words Ranked from Least to Most Difficult ..... 75
Appendix J — Instructions for Use of General Trade Words Section of the Trade Terminology Kit ..... 77
Appendix K — Pre-Test/Post-Test Card for General Trade Words ..... 81
Appendix L — Student Record Sheet for General Trade Words ..... 83
Appendix M — The Language Master System ..... 85
Appendix N — Instructions for Use of Abbreviations/Symbols Section of the Trade Terminology Kit ..... 87
Appendix O — Pre-Test/Post-Test Card for Abbreviations/Symbols ..... 91
Appendix P — Student Record Sheet for Abbreviations/Symbols ..... 93
Appendix Q — Instructions for Use of Signs Section of the Trade Terminology Kit ..... 95
Appendix R — Pre-Test/Post-Test Card for Signs ..... 97
Appendix S — Student Record Sheet for Signs ..... 99
Appendix T — Example of Language Master Cards for Signs ..... 101
Appendix U — Contents Sheet for Trade Math Kit ..... 103
Appendix V — Contents Sheet for Trade Math Skills Section of the Trade Math Kit ..... 105
Appendix W — Illustration of the Trade Terminology Kit ..... 107
Appendix X — Illustration of Trade Math Kit ..... 109
Appendix Y — Informal Math Test ..... 111
Appendix Z — ABE Curriculum Materials and Instructional Equipment ..... 117

## Appendix A
## Department Folder Chart

DEPARTMENT _____

| JOB | JOB DESCRIPTION | READING SKILLS | MATH SKILLS | FORM # | TRADE TERM LIST # |
|---|---|---|---|---|---|
| | | | | | |
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## Appendix B
## Department Folder Chart

| | TERM (WORD) | ABBRE-VIATION | WHERE SEEN (LABEL, FORM, SIGN) | DEPARTMENT GENERAL OR SPECIFIC | JOB USED IN | FREQUENCY SEEN OR USED |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

## Appendix C
## General Trade Words (in alphabetical order)

a
after 126
almond 122
amount 182
attendant 227
average 234

b
badge 28
bag 1
bar 2
before 125
Belle 27
bin 3
black 29
blanch 54
blend 31
block 33
box 57
brand 39
Braniff 202
Brazil 162
building 148
burn 48
butter 107
by 70

c
can 4
candy 108
carrier 228
carton 127
case 149
cashew 123
cello 150
check 75
checker 109
cheese 43
chip 35
chocolate 223
chop 55
clean 83
cocktail 163
code 88
comments 195
condition 214
container 220
control 185
coupon 186
creamy 151
crunchy 152
cup 6

d
damaged 164
dark 7
date 8
decanter 213
department 211
display 153
drain 89
driver 154
dry 71
dump 78

e
each 85
Eastern 196
empty 165
end 32
extra 166

f
family 210
fancies 155
Fashioned 180
filbert 121
fill 9
flavor 167
floor 104
foil 95
for 86
form 87
fragile 161
free 44
fresh 102
Friday 137
from 38
full 42
fun 10

g
gallon 156
glass 90
grade 91
gram 69
gross 68

h
halves 92
health 238
held 105
hold 18
hour 103

i
incoming 209
inside 112
inspect 187
international 237
item 168

j
jar 11
jumbo 176

k
kernels 158
kind 24
king 12

l
label 169
large 99
late 13
limit 199
line 81
load 159
location 215
lot 14
lower 110

m
machine 160
materials 235
maximum 221
meal 84
medium 224
meter 170
midget 177
minimum 222
minute 141
mission 178
mix 56
moldy 139
Monday 133

n
name 76
natural 229
net 15
Northwest 240
number 140
nutritious 233
nut 16

o
off 51
oil 94
old 17
on 50
only 115
operator 216
order 179
Orient 241
ounce 157
outside 113

p
pack 19
packaged 128
pallet 171
pan 20
part 83
party 118
peanut 119
pecan 120
piece 60
Piedmont 197
pistachios 230
plant 98
Planters 129
popcorn 130
pound 63
portable 231
prepared 201
problem 189
product 172
pull 41

q
quality 212
quantity 219

r
rancid 190
range 244
rate 21
raw 101
reading 117
reason 200
receive 204
red 22
redskin 242
regular 232
remarks 191
remove 205
report 188
require 206
returned 161
roast 53
rolls 97
round 62
runners 131

s
salt 96
sample 147
sandwich 143
sanitation 218
Saturday 138

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

scale 67
second 142
seed 23
sesame 226
sheet 45
shell 40
shift 72
ship 36
signature 225
sign 100
size 58
slice 106
slivered 194
snack 30
Southern 193
Spanish 203
split 59
special 243
square 61
sum 79
sunflower 198
supervisor 217
Standard 175
start 73
stock 34
stop 74

t
tally 184
tank 25
tare 66
target 173
tavern 174
temperature 236
Thursday 136
ticket 145
time 80
to 37
toast 52
topping 116
total 183
trailer 146
tree 46
truck 26
Tuesday 134
turn 49

u
units 192
unsalted 207
up 5
upper 111

v
Virginia 208

w
walnut 124
warehouse 144
Wednesday 135
week 47
weigh 64
weight 65
white 82
why 245
worth 239

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

## Appendix D
## Suggested Trade Words When Teaching Initial Consonant Sounds

**B,b**
badge 28
bag 1
bar 2
before 125
Belle 27
bin 3
box 57
building 148
burn 48
butter 107
by 70

**C,c**
can 4
candy 108
carrier 228
carton 127
case 149
cashew 123
cocktail 163
code 88
comments 195
condition 214
container 220
control 185
coupon 186
cup 6

**D,d**
damaged 164
dark 7
date 8
decanter 213
department 211
display 153
dump 78

**F,f**
family 210
fancies 155
Fashioned 180
filbert 121
fill 9
foil 95
for 86
form 87
full 42
fun 10

**G,g**
gallon

**H,h**
halves 92
health 238
held 105
hold 18

**J,j**
jar 11
jumbo 176

**K,k**
kernels 158
kind 24
king 12

**L,l**
label 169
large 99
late 13
limit 199
line 81
load 159
location 215
lot 14
lower 110

**M,m**
machine 160
materials 235
maximum 221
meal 84
medium 224
meter 170
midget 177
minimum 222
minute 141
mission 178
mix 56
moldy 139
Monday 133

**N,n**
name 76
natural 229
net 15
Northwest 240
number 140
nutritious 233
nut 16

**P,p**
pack 19
packaged 128
pallet 171
pan 20
part 93
party 118
peanut 119
pecan 120
piece 60
Piedmont 197
pistachios 230
popcorn 130
pound 63
portable 231
pull 41

**R,r**
rancid 190
range 244
rate 21
raw 101
reading 117
reason 200
receive 204
red 22
redskin 242
regular 232
remarks 191
remove 205
report 188
require 206
returned 161
roasted 53
rolls 97
round 62
runners 131

**S,s**
salt 96
sample 147
sandwich 143
sanitation 218
Saturday 138
second 142
seed 23
sesame 226
signature 225
sign 100
size 58
Southern 193
square 61
sum 79
Sunday 132
sunflower 198
supervisor 217

**T,t**
tally 184
tank 25
tare 66
target 173
tavern 174
temperature 236
ticket 145
time 80
to 37
toast 52
topping 116
total 183
Tuesday 134
turn 49

**V,v**
Virginia 208

**W,w**
walnut 124
warehouse 144
Wednesday 135
week 47
weigh 64
weight 65
worth 239

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

## Appendix E
## Suggested Trade Words When Teaching Word Patterns

| ...short a | ...short e | ...short i | ...short o | ...short u |
|---|---|---|---|---|
| bag 1 | Belle 27 | bin 55 | up 5 | |
| black 29 | shell 40 | chip 35 | lot 14 | cup 6 |
| brand 39 | blend 31 | ship 36 | stock 34 | sum 79 |
| can 4 | end 32 | fill 9 | chop 55 | up 5 |
| pan 20 | net 15 | mix 56 | | |
| glass 90 | red 22 | | | |
| pack 19 | | | | |
| plant 98 | | | | |

| ...long a | ...long e | ...long i | ...long o |
|---|---|---|---|
| display 153 | free 44 | time 80 | hold 18 |
| Sunday 132 | tree 46 | slice 106 | moldy 139 |
| drain 89 | seed 23 | white 82 | load 159 |
| trailer 146 | week 47 | | roast 53 |
| case 149 | clean 83 | | toast 52 |
| date 8 | creamy 151 | | lower 110 |
| late 13 | each 85 | | code 88 |
| rate 21 | reading 117 | | |
| name 76 | meal 84 | | |

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

## Appendix F
## Suggested Trade Words When Teaching Consonant Blends

**sh**
sheet 45
shell 40
shift 72
ship 36

**ch**
check 75
checker 109
cheese 43
chip 35
chocolate 223
chop 55

**th**
Thursday 136

**bl**
black 29
blanch 54
blend 31
block 33

**cl**
clean 83

**fl**
flavor 167
floor 104

**gl**
glass 90

**pl**
plant 98
Planters 129

**sl**
slice 106
slivered 194

**br**
brand 39

**cr**
creamy 151
crunchy 152

**dr**
drain 89

**fr**
fragile 131
free 44
fresh 102
Friday 137
from 38

**gr**
grade 91
gram 69
gross 68

**pr**
prepared 201
problem 189
product 172

**tr**
trailer 146
tree 46
truck 26

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

## Appendix G
## Suggested Trade Words When Teaching the Sound of ER, IR, UR, AR

**er**
average 234
decanter 213
driver 154
filbert 121
kernels 158
lower 110
meter 170
number 140
operator 216
tavern 174

**ir**
Virginia 208

**ur**
burn 48
natural 229
temperature 236

**ar**
bar 2
carton 127
dark 7
department 211
jar 11
large 99
part 93
party 118
start 73

**Suggested Trade Words when teaching Compound Words**

carton
inside
outside
peanuts
popcorn
redskin
sunflower

## Appendix H
## Suggested Trade Words When Teaching Syllables

### one-syllable words

badge 28
bag 1
bar 2
Belle 27
bin 3
black 29
blanch 54
blend 31
block 33
box 57
brand 39
burn 48
by 70
can 4
case 149
check 75
cheese 43
chip 35
chop 55
clean 83
code 88
cup 6
dark 7
date 8
drain 89
dry 71
dump 78
each 85
end 32
fill 9
floor 104
foil 95
for 86
form 87
free 44
fresh 102
from 38
full 42
fun 10
glass 90
grade 91
grams 69
gross 68
halves 92
health 238
held 105
hold 18
hour 105
jar 11
kind 24
king 12
large 99
late 13
line 81
load 159
lot 14
meal 84
mix 56
name 76
net 15
nut 16
oil 94
old 17
on 50
off 51
ounce 157
pack 19
pan 20
part 93
piece 60
plant 98
pound 63
pull 41
range 244
rate 21
raw 101
red 22
rolls 97
round 62
salt 96
scale 67
seed 23
sheet 45
shell 40
shift 72
ship 36
sign 100
size 58
slice 106
snack 30
split 59
square 61
sum 79
start 73
stock 34
stop 74
tank 25
tare 66
time 80
to 37
toast 52
tree 46
truck 26
turn 49
up 5
week 47
weigh 64
weight 65
white 82
why 245
worth 239

### two-syllable words

after 126
almond 122
amound 182
before 125
building 148
butter 107
Brazil 162
candy 108
carton 127
cashew 123
cello 150
checker 109
cocktail 163
comments 195
control 185
coupon 186
creamy 151
crunchy 152
damaged 164
display 153
driver 154
Eastern 196
empty 165
extra 166
fancies 155
Fashioned 180
filbert 121
flavor 167
fragile 181
Friday 137
gallon 156
inside 112
inspect 187
item 168
jumbo 176
kernels 158
label 169
limit 199
lower 110
machine 160
meter 170
midget 177
minute 141
mission 178
moldy 139
Monday 133
number 140
only 115
order 179
outside 113
packaged 128
pallet 171
party 118
peanut 119
pecan 129
Piedmont 197
Planters 129
popcorn 130
prepared 201
problem 189
product 172
rancid 190
reading 117
reason 200
receive 204
remarks 191
remove 205
report 188
require 206
returned 161
runners 131
sample 147
sandwich 143
second 142
slivered 194
Southern 193
Spanish 203
special 243
Standard 175
tally 184
target 173
tavern 174
Thursday 136
ticket 145
topping 116
total 183
trailer 146
Tuesday 134
units 192
upper 111
walnut 124
warehouse 144
Wednesday 135

**three-syllable words**

attendant 227
average 234
carrier 228
chocolate 223
condition 214
container 220
decanter 213
department 211
family 210
incoming 209
location 215
maximum 221
medium 224
minimum 222
natural 229
nutritious 233
portable 231
quality 212
quantity 219
regular 232
sesame 226
signature 225
sunflower 198
unsalted 207
Virginia 208

**four or more-syllable words**

materials 235
operator 216
sanitation 218
Saturday 138
supervisor 217
temperature 236
international 237

(Number beside word corresponds with Language Master (L.M.) card number of that same word.)

Appendix I
Partial Listing of General Trade Words
Ranked from Least to Most Difficult

| Rank | Word | Comments to justify rank of word. | | |
|---|---|---|---|---|
| 1 | BAG | one syllable, | phonetically regular, | concrete |
| 2 | BAR | " " , | " " , | " |
| 3 | BIN | " " , | " " , | " |
| 4 | CAN | " " , | " " , | " |
| 5 | UP | " " , | " " , | frequently used |
| 8 | DATE | " " | " " , | " " |
| 9 | FILL | " " | " " , | |
| 16 | NUT | " " , | " " , | concrete |
| 18 | HOLD | " " , | " " , | |
| 23 | SEED | " " , | " " , | concrete |
| 221 | MAXIMUM | three syllables, | abstract | |
| 222 | MINIMUM | " " , | " | |
| 223 | CHOCOLATE | " " , | phonetically irregular | |
| 224 | MEDIUM | " " , | abstract | |
| 225 | SIGNATURE | " " , | phonetically difficult | |
| 228 | CARRIER | " " , | infrequently used | |
| 229 | NATURAL | " " , | abstract | |
| 230 | PISTACHIOS | " " , | infrequently used | |
| 234 | AVERAGE | " " , | abstract | |
| 236 | TEMPERATURE | four syllables, | infrequently used | |

Appendix J
Instructions for Use of the General Trade Words Section
of the Trade Terminology Kit

Kit contains:

1) Instructions for Use of General Trade Words Section.
2) Pre-Test/Post-Test Cards.
3) General Trade Words List - Student Record Sheet with words ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult.
4) Teacher Reference Cards.
   a) General Trade Words List in Alphabetical Order.
   b) Suggested Trade Words When Teaching Initial Consonant Sounds.
   c) Suggested Trade Words When Teaching Word Patterns.
   d) Suggested Trade Words When Teaching Consonant Blends.
   e) Suggested Trade Words When Teaching the Sound of ER, IR, UR, AR
   f) Suggested Trade Words When Teaching Compound Words.
   g) Suggested Trade Words When Teaching Syllables.
5) Language Master Cards of each general trade word (with the same number as indicated on the Student Record Sheet).

INSTRUCTIONS FOR USE

STEP 1: Administer Pre-Test.

Give the student the Pre-Test/Post Test Cards from which to read the general trade words. If the student knows the word, place a check beside it on the Student Record Sheet. If the student does not know the word, leave the space blank. If the student becomes frustrated or misses 5-10 words consecutively, cease testing or allow the student to look through words and identify any others he or she might know. Record the number of known trade words in the Pre-Test Score blank at the top of the Student Record Sheet.

STEP 2: Explain General Trade Words List.

The General Trade Words List is a list of words seen or used around the plant. The words appear on boxes, cases, labels, shippers, forms, vouchers, etc. They are words that would be helpful for any worker to know despite his or her job description.

STEP 3: Negotiate a learning contract.

Negotiate a learning contract with the student to begin learning the unknown trade words (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due date. Any number of words, preferrably no less than three or more than six at any given time, can be selected. A contract due date is established and recorded on the Student Record Sheet. On the contract due date the teacher checks to see if the student knows the word and a new contract is negotiated.

STEP 4: Select trade words to be learned and contracted, using one of the following methods:

1. Find out if the student reads or completes any forms while on the job. This can be done by (1) finding out from what department the student comes and what job he or she performs and then referring to that department folder and under that job description, (2) asking the worker to bring to class any forms he or she reads or completes on the job, or by (3) going to the department supervisor and obtaining the forms. (Forms are subject to frequent changes, so those in the department folder may be out of use.) Locate and mark the words from the form on the Student Record Sheet. Beginning with the word(s) with the lowest numbers, contract three to six words to be learned during a given contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

2. Beginning with the first unknown word on the Student Record Sheet and proceeding in order down the sheet, contract three to six words to be learned during a contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

3. As the student is learning a particular word attack skill taught in his or her prescribed reading program, refer the student to a group of trade words illustrating that word attack skill. Use the Teacher Reference Cards to locate the trade words teaching that skill and to find out the number of the Language Master Card on which the trade word appears. (Remember, the words with the lowest numbers are the least difficult to learn.) For example, if the student is learning the initial consonant sound of b,c, and d; choose a group of trade words beginning with these letters to reinforce the sound. If the student is learning about syllables, compound words, or forming plurals or words, use trade words as examples and for drill. Trade words selected in this manner can be contracted or can be used just as reinforcement of a skill.

STEP 5: Teach trade words.

After a contract is established and a group of words selected by one of the methods mentioned in STEP 4, have the student begin learning the words using one or more of the methods described below. Teachers are encouraged to try more than one of the teaching methods to discover which one(s) work best with a particular student. They also are encouraged to be creative in developing their own teaching techniques.

FIRST:

Take the student to the Language Master. Demonstrate the use of the Language Master. Draw from the general trade words section of the Trade Terminology Kit the Language Master Cards of the words selected and/or contracted.

THEN:

Discuss each contracted word with the student. (Where might the word be seen in the plant? Where is the word found on a particular form? Can the student use the word in a sentence? Can the student picture the object the word represents, if applicable?)

USING A VISUAL METHOD

1. Listen to the word on the instructor track of the Language Master Card.
2. Say the word, then say the word again recording voice on the student track of the Language Master Card.
3. Listen to the recorded word.
4. Take a picture of the letters of the word.
5. Close eyes and picture word in your mind.
6. Open eyes and look at word again; then say word again.

USING A KINESTHETIC METHOD

1. Listen to the word on the instructor track of the Language Master Card.
2. Say the letters in the word reading them from the Language Master Card.
3. Print the word on paper.
4. Check to see if it is printed correctly.
5. Look at the word and say the word again.

LEVEL II STUDENTS ALSO CAN ...

... learn to spell the word by printing the word six times.
... use the word in a sentence and print the sentence.

**STEP 6:** Check trade words contracted on contract due date.

On the contract due date check to see if the student knows the contracted words. If the word is known, check the contract due date beside the word on the Student Record Sheet. If the word is not known, do not check the contract due date. Negotiate a new contract including the unknown words, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned words should be provided throughout the instructional phase of the program.

**STEP 7:** Administer Post-Test.

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the general trade words from the Pre-Test/Post-Test Cards. Record the number of known trade words in the Post-Test Score blank at the top of the Student Record Sheet. Compare Pre-Test and Post-Test scores to see how many trade words have been added to the trade vocabulary of the student.

Appendix K

# GENERAL TRADE WORDS LIST

(PRE-TEST/POST-TEST CARD #1)

| | | | | |
|---|---|---|---|---|
| BAG | OLD | BLOCK | TURN | WEIGHT |
| BAR | HOLD | STOCK | ON | TARE |
| BIN | PACK | CHIP | OFF | SCALE |
| CAN | PAN | SHIP | TOAST | GROSS |
| UP | RATE | TO | ROAST | GRAM |
| CUP | RED | FROM | BLANCH | BY |
| DARK | SEED | BRAND | CHOP | DRY |
| DATE | KIND | SHELL | MIX | SHIFT |
| FILL | TANK | PULL | BOX | START |
| FUN | TRUCK | FULL | SIZE | STOP |
| JAR | BELLE | CHEESE | SPLIT | CHECK |
| KING | BADGE | FREE | PIECE | NAME |
| LATE | BLACK | SHEET | SQUARE | CRUNCH |
| LOT | SNACK | TREE | ROUND | DUMP |
| NET | BLEND | WEEK | POUND | SUM |
| NUT | END | BURN | WEIGH | TIME |

Appendix L
Student Record Sheet for General Trade Words

**GENERAL TRADE WORDS LIST**
**Student Record Sheet**

Name _____

Pre-Test Score _____

Post-Test Score _____

| L.M. Card # | Trade Word | Pre-Test (✓ if known) | Contract Due Date | | Post-Test (✓ if known) |
|---|---|---|---|---|---|
| 1 | BAG | | | | |
| 2 | BAR | | | | |
| 3 | BIN | | | | |
| 4 | CAN | | | | |
| 5 | UP | | | | |
| 6 | CUP | | | | |
| 7 | DARK | | | | |
| 8 | DATE | | | | |
| 9 | FILL | | | | |
| 10 | FUN | | | | |
| 11 | JAR | | | | |
| 12 | KING | | | | |
| 13 | LATE | | | | |
| 14 | LOT | | | | |
| 15 | NET | | | | |
| 16 | NUT | | | | |
| 17 | OLD | | | | |
| 18 | HOLD | | | | |
| 19 | PACK | | | | |
| 20 | PAN | | | | |
| 21 | RATE | | | | |
| 22 | RED | | | | |
| 23 | SEED | | | | |
| 24 | KIND | | | | |
| 25 | TANK | | | | |
| 26 | TRUCK | | | | |
| 27 | BELLE | | | | |
| 28 | BADGE | | | | |
| 29 | BLACK | | | | |
| 30 | SNACK | | | | |



C2

## Appendix M
## The Language Master System

(The following information is copied from the **1980 Bell & Howell Company, Language Master Systems Catalog**.)

"It's a known fact that the more senses involved in the learning process, the greater the retention. By appealing to the pupil's senses of seeing, hearing, speaking and touching in an instructional program, language and communication skills can greatly-and quickly-be improved.

The Language Master unit when combined with prerecorded card sets is a perfect instructional system to support these learning objectives. Designed by educators and teaching professionals, the Language Master unit meets the special needs of almost every student. A console model or portable Language Master allows the learner to see and hear information presented on a card and recorded on an instructor track. Next, the learner records his or her response on the Student track. Finally, the learner compares his or her response with the Instructor track.

Aside from the multi-sensory advantage, the Language Master Systes allows a learner to work independently with minimal teacher supervision and at his or her own speed. Because the student is motivated through his or her involvement during the study session, learning is more meaningful and effective."

The Six Laws of Learning:
How the Language Master System Stacks Up.

1. Instruction is effective when the student is **motivated** to learn. The key to motivation is personalization of instruction. The Language Master System provides it.
2. Instruction is effective when learning is **individualized**.
   a. When learning begins at the student's level of understanding.
   b. When the student learns at his own rate.
   c. When the material relates to the student's background.

   Individualization is a unique strength to the Language Master System.
   a. Language Master Cards can be used to diagnose level of performance.
   b. They can be mastered at the student's own pace.
   c. They can reflect the student's cultural, ethnic and economic background.
3. Instruction is effective when the student is **active**. Language Master Cards require the student to repeat, answer, compare, and correct. The student becomes involved in the learning experience.
4. Instruction is effective when it involves **many senses.** Language Master Cards appeal to all the senses particularly seeing, hearing, and speaking. They may even be modified to incorporate tactile learning.
5. Instruction is effective when **oral language** and listening precede reading and writing. The Language Master System allows the student to learn reading and writing through an oral language approach.
6. Instruction is effective when the student **succeeds.** Through personalization, individualized instruction and its unique appeal to the senses, the Language Master System gives you the tools to make the learner succeed. Extensive tests have proven it.

(Blank card sets of various sizes are available. It is on these cards that the trade words, abbreviations, and signs are printed and recorded.)

"Use Your Own Creativity.
The only limitation is your own imagination! These cards are ready for your own programming. Draw on them for visual excitement. Laminate them with acetate for use with marking pencils. Apply herbs and spices on them with tactile materials for a kinesthetic experience. Create your own autoinstructional programs."

## Appendix N
## Instructions for Use of Abbreviations/Symbols Section of Trade Terminology Kit

**Kit contains:**

1) Instructions for Use of the Abbreviations/Symbols Section.
2) Pre-Test/Post-Test Card.
3) Abbreviations/Symbols List - Student Record Sheet with abbreviations/symbols ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult.
4) Language Master Cards of each abbreviation/symbol (with the same number as indicated on the Student Record Sheet).

### INSTRUCTIONS FOR USE

**STEP 1: Administer Pre-Test.**

Give the student the Pre-Test/Post-Test Card from which to read the abbreviations/symbols. If the student knows the abbreviation/symbol, place a check beside it on the Student Record Sheet. If the student does not know the abbreviation/symbol, leave the space blank. Record the number of known abbreviations/symbols in the Pre-Test Score blank at the top of the Student Record Sheet.

**STEP 2: Explain the terms "abbreviations" and "symbols."**

An abbreviation is a short form of a word. It takes up less space and can be written quickly. It is usually followed by a period. An abbreviation is written either in lower case letters or in all capital letters. Often two or more of the letters in the word are used to form the abbreviation.

For example: Virginia - Va. VA. VA
hour - hr. HR. HR
weight - wt. WT. WT

A symbol is something (a sign) that stands for or suggests something else, either a word or an idea. It takes up less space and can be written quickly.

For example: ¢ stands for cent(s)
& stands for and
$ stands for dollar(s)

**STEP 3: Negotiate a learning contract.**

Negotiate a learning contract with the student to begin learning the unknown abbreviations/symbols (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due date. Any number of abbreviations/symbols, preferrably no less than three or more than six at any given time, can be selected. A contract due date is established and recorded on the Student Record Sheet. On the contract due date the teacher checks to see if the student knows the abbreviation/symbol and a new contract is negotiated.

**STEP 4: Select abbreviations/symbols to be learned and contracted, using one of the following methods:**

1. Find out if the student reads or completes any forms while on the job. This can be done by (1) finding out from what department the student comes and what job he or she performs and then referring to that department folder under that job description, (2) asking the worker to bring to class any forms he or she reads or completes on the job, or by (3) going to the department supervisor and obtaining the forms. Locate and mark the abbreviations/symbols from the form on the Student Record Sheet. Beginning with the abbreviations/symbols with the lowest numbers, contract three to six abbreviations/symbols to be learned during a given contract period. Establish a contract due date and record the date on the Student Record Sheet.

2. Beginning with the first unknown abbreviation/symbol on the Student Record Sheet and proceeding in order down the sheet, contract three to six abbreviations/symbols to be learned during a contract period. Establish a contract due date and record the date beside each contracted abbreviation/symbol on the Student Record Sheet.

STEP 5: Teach abbreviations/symbols.

After a contract is established and a group of abbreviations/symbols selected by one of the methods mentioned in STEP 4, have the student begin learning the abbreviations/symbols, using one or more of the methods described below. Teachers are encouraged to try more than one method to discover which one(s) work best with a particular student. They also are encouraged to be creative in developing their own teaching techniques.

FIRST:

Take the student to the Language Master. Demonstrate the use of the Language Master. Draw from the abbreviations/symbols section of the Trade Terminology Kit the Language Master Cards of the abbreviations/symbols selected and/or contracted.

THEN:

Discuss each contracted abbreviation/symbol with the student. (Where might the abbreviation/symbol be seen in the plant? Where is it found on a particular form? Can the student use it in an everyday situation outside the plant?)

USING A VISUAL METHOD

1. Listen to the word the abbreviation/symbol stands for on the instructor track of the Language Master Card while looking at the abbreviation/symbol.
2. Say the word the abbreviation/symbol stands for, then say again recording voice on the student track of the Language Master Card.
3. Listen to the recorded voice.
4. Take a picture of the letters or symbol of the abbreviation/symbol.
4. Close eyes and picture the abbreviation/symbol.
6. Open eyes and look at the abbreviation/symbol again; then say it again.

USING A KINESTHETIC METHOD

1. Listen to the abbreviation/symbol on the instructor track of the Language Master Card while looking at the abbreviation/symbol.
2. Print the abbreviation/symbol as seen on the Language Master Card on a sheet of paper.
3. Print the word the abbreviation/symbol stands for as seen on the back of the Language Master Card on paper.
4. Circle the letters in the word that are used in the abbreviation on paper, if applicable.
5. Print the abbreviation/symbol two times on paper.

FOR ADDITIONAL DRILL TRY ...

... making flash cards out of index cards for the contracted abbreviations/symbols. Put them in an envelope for the student to use for review.

... designing a matching drill where abbreviations/symbols in one column are matched with the corresponding words in another column.

STEP 6: Check abbreviations/symbols on contract due date.

On the contract due date check to see if the student knows the contracted abbreviations/symbols. If the abbreviation/symbol is known, check the contract due date beside the abbreviation/symbol on the Student Record Sheet. If the abbreviation/symbol is not known, do not check the contract due date. Negotiate a new contract including the unknown abbreviations/symbols, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned abbreviations/symbols should be provided throughout the instructional phase of the program.

STEP 7: Administer Post-Test.

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the abbreviations/symbols from the Pre-Test/Post-Test Card. Record the number of known abbreviations/symbols in the Post-Test Score bland at the top of the Student Record Sheet. Compare Pre-Test and Post-Test scores to see how many abbreviations/symbols have been added to the trade vocabulary of the student.

Appendix O

# ABBREVIATIONS AND SYMBOLS

(Pre-Test/Post-Test Card)

| | | |
|---|---|---|
| ¢ | MIN. | SLTD. |
| EA. | GR.WT. | DEPT. DPT. |
| LBS. | % | VA. |
| WT. | FL. | U.S. |
| HR. | TOT. | QTY. |
| & | BLDG. | PKGS. |
| GMS. | D R | MAX. |
| FL. | PCS. | MIN. |
| HVS. | PNUT. | MFD. |
| OZ. | SPN. | TEMP. |
| MR. | PAL. | O.P. |
| NO. # | XTRA. | UCL |
| SEC. | N/P N.P. | LCL |

*PRE-TEST/POST-TEST CARD FROM WHICH STUDENT READS. STUDENT SHOULD READ DOWN THE COLUMNS.

Appendix P
Student Record Sheet for Abbreviations/Symbols

ABBREVIATIONS/SYMBOLS LIST
Student Record Sheet

Name _____

Pre-Test Score _____

Post-Test Score _____

| L.M. Card # | Abbreviation | Pre-Test ( ✓ if known) | Contract Due Date | | Post-Test ( ✓ if known) |
|---|---|---|---|---|---|
| 1 | ¢ | | | | |
| 2 | EA. | | | | |
| 3 | LBS. | | | | |
| 4 | WT., wt. | | | | |
| 5 | HR. | | | | |
| 6 | & | | | | |
| 7 | g., GMS. | | | | |
| 8 | FL. | | | | |
| 9 | HVS. | | | | |
| 10 | OZ. | | | | |
| 11 | MR. | | | | |
| 12 | NO., # | | | | |
| 13 | SEC. | | | | |
| 14 | MIN. | | | | |
| 15 | GR.WT. | | | | |
| 16 | % | | | | |
| 17 | FL. | | | | |
| 18 | TOT. | | | | |
| 19 | BLDG. | | | | |
| 20 | D R | | | | |
| 21 | PCS. | | | | |
| 22 | PNUT. | | | | |
| 23 | SPN. | | | | |
| 24 | PAL. | | | | |
| 25 | XTRA. | | | | |
| 26 | N/P, N.P. | | | | |
| 27 | SLTD. | | | | |
| 28 | DEPT., DPT. | | | | |
| 29 | VA., Va. | | | | |
| 30 | U.S. | | | | |

Appendix Q
Instructions for Use of Signs Section
of the Trade Terminology Kit

Kit contains:

1) Instructions for Use of Signs Section.
2) Pre-Test/Post-Test Cards.
3) Signs List - Student Record Sheet with signs ranked from least to most difficult and numbered accordingly with number one (1) being the least difficult.
4) Envelopes containing Language Master Card(s) of each sign (with the same number as indicated on the Student Record Sheet.)

INSTRUCTIONS FOR USE

STEP 1: Administer Pre-Test.

Give the student the Pre-Test/Post-Test Cards from which to read the list of signs. If the student knows the sign, place a check beside it on the Student Record Sheet. If the student does not know the sign, leave the space blank. Record the number of known signs in the Pre-Test Score blank at the top of the Student Record Sheet.

STEP 2: Explain Signs List.

The Signs List is a list of signs as seen in the plant. The signs are found on the walls, doors, posts, machines, equipment, and in offices. The signs are in the plant for many reasons. Most importantly, signs are for safety. They warn the worker of danger. Signs give instructions and directions. Signs provide information about the product (its name, its weight, its contents, its usage). Signs tell what to do or what not to do with the product. Signs should be read and followed; not ignored.

STEP 3: Negotiate a learning contract.

Negotiate a learning contract with the student to begin learning unknown signs (as indicated through pretesting). First, explain the term "contract" and the contract system of learning.

A contract is a written agreement between two or more persons or parties. A learning contract states what is to be learned and by what date, the contract due date. Any number of signs, preferrably no less than three or more than six, can be selected. A contract due date is established and recorded on the Student Record Sheet. On the contract due date the teacher checks to see if the student knows the sign and a new contract is negotiated.

STEP 4: Select signs to be learned and contracted.

Beginning with the first unknown sign on the Student Record Sheet and proceeding in order down the sheet, contract three to six signs to be learned during a contract period. Establish a contract due date and record the date beside each contracted word on the Student Record Sheet.

STEP 5: Teach signs.

After a contract is established and a group of signs selected, have the student begin learning the signs using the methods described below. Teachers are encouraged to develop their own teaching techniques and to design drills for learning.

FIRST THE TEACHER SHOULD:

Print in large letters on a sheet of paper the word(s) in the signs to be learned leaving enough space underneath to place a small word card.

Print each word in the sign on a small card and also the number of the sign (as indicated on the Student Record Sheet and on the sign envelope found in the Trade Terminology Kit) on the back of each card.

Print the sign and its number on the outside of an envelope in which the small card(s) will be kept.

Take the student to the Language Master. Demonstrate the use of the Language Master. Draw from the signs sections of the Trade Terminology Kit the envelopes containing the Language Master Cards of the signs selected and/or contracted.

THEN THE STUDENT SHOULD:

Listen to the word(s) of the sign on the instructor track of the Language Master Card in correct order, following sequential letters of the alphabet found next to number in bottom right corner of the Language Master Card.

Say the word(s) of the sign, then say the word(s) again recording voice on the student track of the Language Master Card.

Listen to recorded voice.

Take a picture of the letters of each word of the sign.

Close eyes and picture each word of the sign in his or her mind.

Open eyes and look at the word(s) of the sign again; then, say word(s) of the sign again, looking at the Language Master Card(s).

Take small cards and say word(s). If there is more than one word to the sign, place small cards in correct order as sign is read.

Place small card underneath the same word printed on paper.

Read the word(s) of the sign again. Read the sign again.

Print the word(s) of the sign on paper for additional reinforcement. Read again.

STEP 6: Check signs on contract due date.

On the contract due date check to see if the student knows the contracted signs. If the sign is known,check the contract due date beside the sign on the Student Record Sheet. If the sign is not known, do not check the contract due date. Negotiate a new contract including the unknown signs, if any. Provide additional drill or try different teaching techniques. Review of previously contracted and learned signs should be provided throughout the instructional phase of the program.

STEP 7: Administer Post-Test

At the end of the instructional phase of the program or when the student withdraws or completes the program, administer the Post-Test by having the student read the signs from the Pre-Test/Post-Test Cards. Record the number of known signs in the Post-Test Score blank at the top of the Student Record Sheet. Compare Pre-Test and Post-Test Scores to see how many signs have been added to the sign vocabulary of the student.

Appendix R

## SIGNS

(PRE-TEST/POST-TEST CARD #1)

| | |
|---|---|
| HOLD | HIGH VOLTAGE |
| THINK | NO SMOKING |
| DANGER | REJECTED |
| KEEP OUT | KEEP HANDS CLEAR |
| LUNCH BREAK | QUALITY FIRST |
| MACHINE # | NO. _____ SHIPPERS |
| MISSION | KEEP GUARD IN PLACE |
| TARE 575 | DO NOT ENTER |
| FRAGILE | LOOK OUT FOR TRUCKS |
| FIRE EXIT | HANDLE WITH CARE |
| DANGER - HOT | LOAD LIMITS _____ LBS. |
| DO NOT SHIP | RETURN TO STORAGE |
| DO NOT USE | CAUTION - HIGH VOLTAGE |

Appendix S
Student Record Sheet for Signs

SIGNS LIST
Student Record Sheet

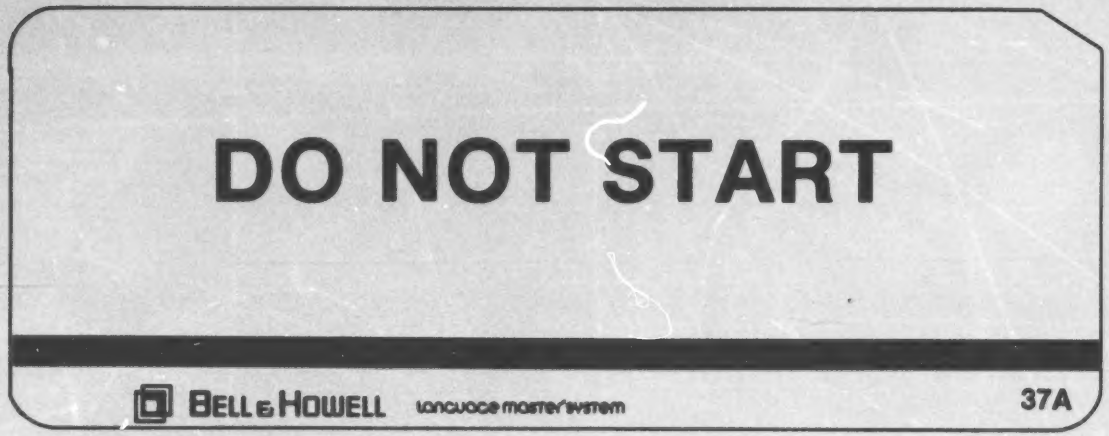
Name _____

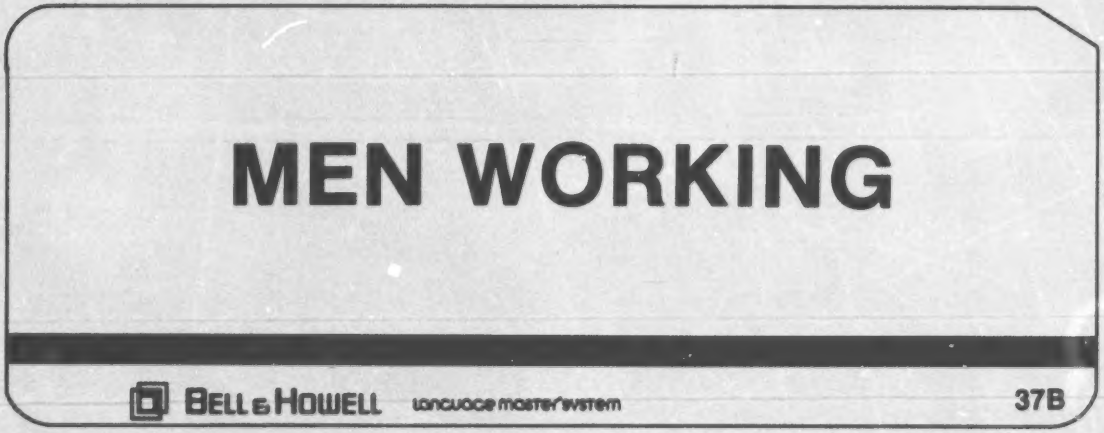
Pre-Test Score _____

Post-Test Score _____

| L.M. Card # | Sign | Pre-Test (✓ if known) | Contract Due Date | | Post-Test (✓ if known) |
|---|---|---|---|---|---|
| 1 | HOLD | | | | |
| 2 | THINK | | | | |
| 3 | DANGER | | | | |
| 4 | KEEP OUT | | | | |
| 5 | LUNCH BREAK | | | | |
| 6 | MACHINE # | | | | |
| 7 | MISSION | | | | |
| 8 | TARE 575 | | | | |
| 9 | FRAGILE | | | | |
| 10 | FIRE EXIT | | | | |
| 11 | DANGER - HOT | | | | |
| 12 | DO NOT SHIP | | | | |
| 13 | DO NOT USE | | | | |
| 14 | HIGH VOLTAGE | | | | |
| 15 | NO SMOKING | | | | |
| 16 | REJECTED | | | | |
| 17 | KEEP HANDS CLEAR | | | | |
| 18 | QUALITY FIRST | | | | |
| 19 | NO. ____ SHIPPERS | | | | |
| 20 | KEEP GUARD IN PLACE | | | | |
| 21 | DO NOT ENTER | | | | |
| 22 | LOOK OUT FOR TRUCKS | | | | |
| 23 | HANDLE WITH CARE | | | | |
| 24 | LOAD LIMITS ____ LBS. | | | | |
| 25 | RETURN TO STORAGE | | | | |
| 26 | CAUTION - HIGH VOLTAGE | | | | |
| 27 | THINK - PRACTICE SAFETY | | | | |
| 28 | DO NOT TOUCH SWITCHES | | | | |
| 29 | ALMONDS/NON-PAREIL | | | | |
| 30 | DO NOT WASTE OR SPILL | | | | |

Appendix T
Example of Language Master Cards for Signs




These Language Master Cards are placed in one envelope. On the outside of the envelope is printed 37A and 37B.

The number "37" (in the lower right corner of the card) is the same number as that appearing beside the same sign on the Student Record Sheet. The letters "A" and "B" indicate the correct reading order. Language Master Card 37A is read before Language Master Card 37B.

Appendix U
Contents Sheet for Trade Math Kit

# NO FRILL MATH DRILLS

## CONTENTS

Grade 1 No. 1911

*No regrouping in AS 1-22


| Page | Skill | Example |
|---|---|---|
| 1 A1 | Addition: sums to 5 | 1 + 1 = 2 |
| 2 S2 | Subtraction: differences to 5 | 5 − 2 = 3 |
| 3 A3 | Addition: sums to 10 | 4 + 2 = 6 |
| 4 S4 | Subtraction: differences to 10 | 10 − 5 = 5 |
| 5 AS5 | Adding and subtracting with zero | 0 + 3 = 3 |
| 6 AS6 | Addition and Subtraction: 1 more than, 1 less than | 1 + 7 = 8 |
| 7 AS7 | Addition and Subtraction: sums and differnces to 5 | 4 + 1 = 5 |
| 8 AS8 | Addition and Subtraction: sums and differences to 5 | 2 + 1 = 3 |
| 9 AS9 | Addition and Subtraction: sums and differences to 10 | 4 + 6 = 10 |
| 10 AS10 | Addition and Subtraction: sums and differences to 10 | 6 − 1 = 5 |
| 11 A11 | Addition: missing addend, sums to 5 | 3 + [2] = 5 |
| 12 S12 | Subtraction: missing subtrahend | 4 − [1] = 3 |
| 13 A13 | Addition: missing addend, sums to 10 | 2 + [8] = 10 |
| 14 A14 | Addition: missing addend, sums to 10 | [4] + 4 = 8 |
| 15 S15 | Subtraction: missing subtrahend | 8 − [2] = 6 |
| 16 AS16 | Addition and Subtraction: missing addends and subtrahends, sums to 5 | [1] + 2 = 3 |
| 17 AS17 | Addition and Subtraction: missing addends and subtrahends, sums to 10 | [2] + 7 = 9 |
| 18 A18 | Commutative property | 2+3= [3] + 2 |
| 19 A19 | Addition: vertical notation 3 addends, sums to 10 | 1 + 2 + 3 = 6 |
| 20 A20 | Addition: vertical notation, 3 and 4 addends, sums to 10 | 4 + 2 + 1 = 7 |
| 21 AS21 | Review | |
| 22 AS22 | Review | |

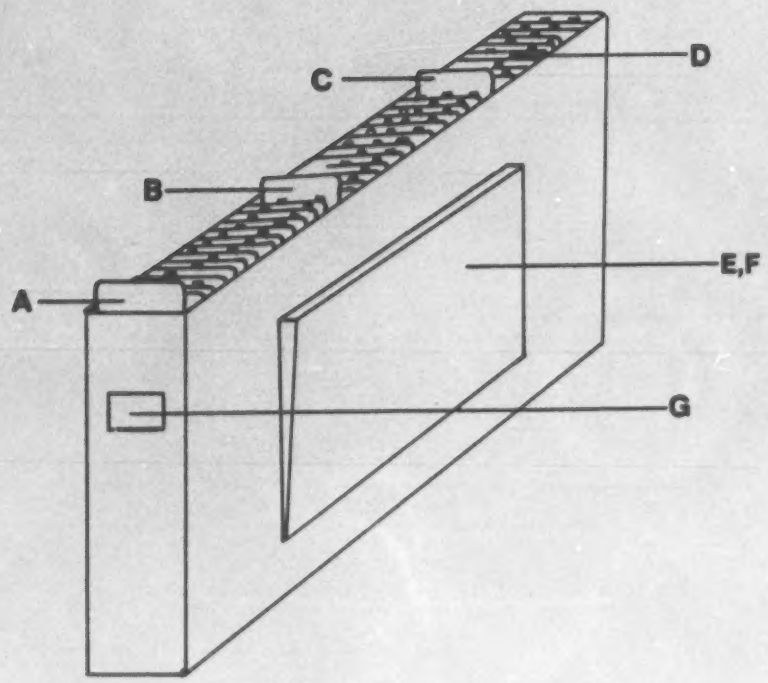

NOTE: "A" stands for Addition.
"S" stands for Subtraction.
The A/S number is the way in which the worksheet is filed and identified.

## Appendix V
## Contents Sheet for Trade Math Skills Section of the Trade Math Kit

| File No. | Skill Description | Used by... | Basic math skills... |
|---|---|---|---|
| TMS 1 | Figuring number of cases per pallet.<br>Includes worksheets<br>TMS 1A - TMS 1N.<br>See TMS 3 for related drill in multiplication. | Fork lift drivers<br>Palletizers<br>Checker drivers | Multiplication tables.<br>Multiplication as in:<br>$\underline{\times 7}^{8}$ or $\underline{\times 6}^{17}$ |
| TMS 2 | Completing QC Chart.<br>A series of drill exercises including:<br><br>a) related addition & subtraction problems<br>b) related multiplication & division problems concentrating on "5"<br>c) adding decimal numbers<br>d) finding averages and rounding off | QC Overchecker | Addition<br>Subtraction<br>Multiplication<br>Division by "5"<br>A/S of decimal numbers |
| TMS 3 | Completing cases/pallets report. | Checker drivers<br>Fork lift drivers<br>in Shipping and Receiving Departments | Write numbers legibly.<br>Count and write numbers in sequence.<br>Multiplication tables as in TMS 1. |
| TMS 4 | Reading a time card. | All workers. | Reading numbers.<br>Addition of time. |

NOTE: "TMS" stands for Trade Math Skill.
The TMS number is the way in which the lesson is filed and identified.

Appendix W
Illustration of Trade Terminology Kit




TRADE TERMINOLOGY KIT

A — General Trade Words section divider

B — Abbreviation/Symbols section divider

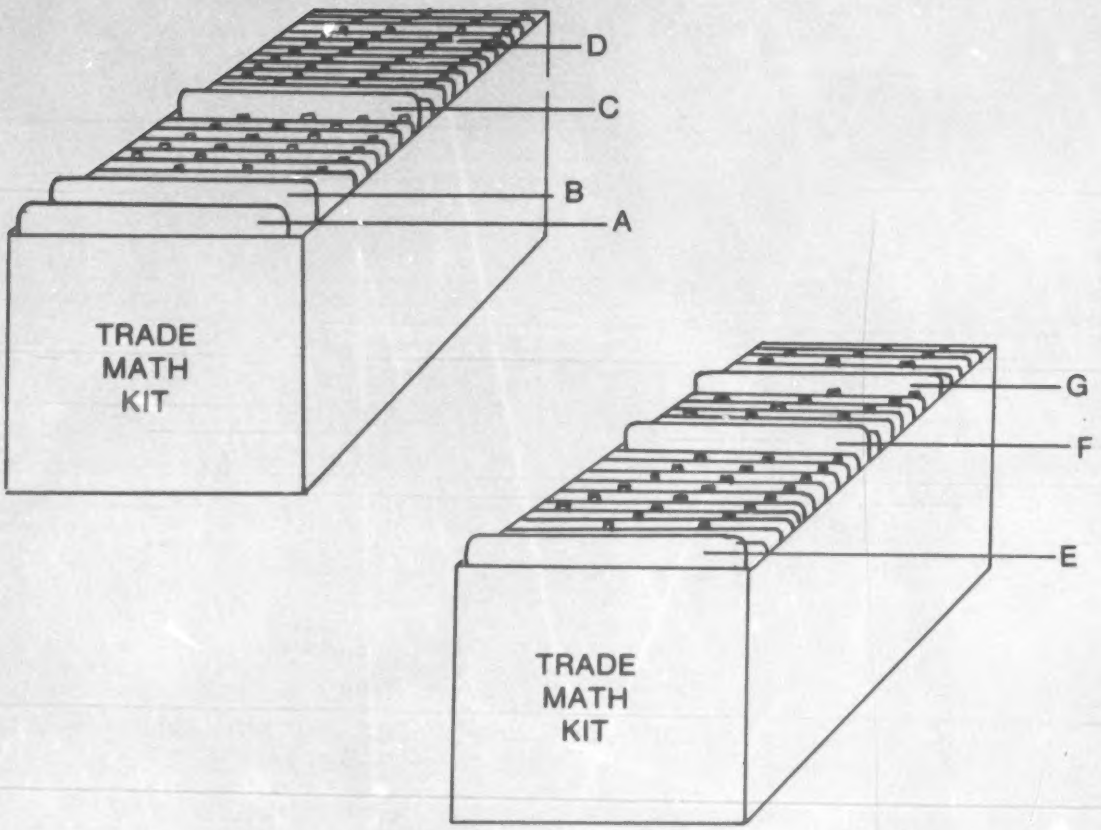
C — Signs section divider

D — Numbered tabs on dividers (where Language Master cards are inserted)

E & F — One pocket on each side of box containing (1) Instructions for Use of Kit, (2) Pre-Test/Post-Test Cards (laminated), (3) Teacher Reference Cards for General Trade Words section (laminated), (4) sample Student Folder, and (5) all original copies for future duplicating.

G — Label (Trade Terminology Kit)

Appendix X
Illustration of Trade Math Kit




TRADE MATH KIT

A — **Whole Numbers** section divider (words and tabs printed in RED)

B — **Whole Numbers/Addition and Subtraction** section divider (RED)

C — **Whole Numbers/Multiplication and Division** section divider (RED)

D — Numbered and lettered tabs on dividers (where drill sheets are inserted)

E — **Fractions** section divider (GREEN)

F — **Decimals** section divider (BLUE)

G — **Trade Math Skills** section divider (PURPLE)

Appendix Y
Informal Math Test

I

Name _____

Badge number _____

## Addition

| | | | | |
|---|---|---|---|---|
| 53<br>+ 36 | 40<br>+ 28 | 73<br>+ 8 | 99<br>+ 53 | 745<br>+ 266 |

$ 43.57
6.89
.72
+ 3.12

$10.00 + $.25 + $4.40 + $6 =

## Subtraction

| | | | | |
|---|---|---|---|---|
| 16<br>- 8 | 48<br>- 26 | 745<br>- 246 | 6805<br>- 3527 | 7004<br>- 6657 |

$15.00
- 1.75

$64 - $12.66 =

# I

## Mulitplication

| | | | | |
|---|---|---|---|---|
| 9 | 14 | 34 | 762 | 206 |
| × 7 | × 9 | × 23 | × 52 | × 30 |

| | |
|---|---|
| 378 | 482 |
| × 295 | × 791 |

## Division

7 ⟌ 63

7 ⟌ 287

12 ⟌ 384

9 ⟌ 2007

16 ⟌ 4864

126 ⟌ 27090

# II

## Addition

$$\begin{array}{r} \frac{1}{8} \\ \frac{3}{8} \\ +\ \frac{5}{8} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{2} \\ +\ \frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{2}{3} \\ +\ \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 15\ \frac{3}{4} \\ +\ 12\ \frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} 19\ \frac{7}{8} \\ +\ 12 \\ \hline \end{array} \qquad \begin{array}{r} 27\ \frac{1}{4} \\ +\ 13\ \frac{3}{8} \\ \hline \end{array}$$

## Subtraction

$$\begin{array}{r} \frac{3}{4} \\ -\ \frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{3}{4} \\ -\ \frac{1}{8} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{3} \\ -\ \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 21\ \frac{3}{4} \\ -\ 9 \\ \hline \end{array} \qquad \begin{array}{r} 19 \\ -\ 7\frac{2}{3} \\ \hline \end{array} \qquad \begin{array}{r} 30\ \frac{1}{2} \\ -\ 14\ \frac{1}{4} \\ \hline \end{array}$$

# 11

## Multiplication

$5 \times \frac{3}{10} =$

$9 \times 2\frac{1}{3} =$

$\frac{1}{2} \times \frac{4}{5} =$

$8\frac{1}{3} \times \frac{3}{5} =$

$\frac{1}{2} \times 25 =$

$3\frac{1}{3} \times 2\frac{2}{5} =$

## Division

$\frac{3}{8} \div 3 =$

$3 \div \frac{3}{8} =$

$\frac{1}{2} \div \frac{1}{6} =$

$4\frac{2}{3} \div \frac{7}{8} =$

$5\frac{1}{3} \div \frac{1}{2} =$

$10\frac{1}{2} \div 1\frac{3}{4} =$

81

# II

## Addition

$$\begin{array}{r} .4 \\ +\ .5 \\ \hline \end{array} \qquad \begin{array}{r} 108.75 \\ +\ 235.87 \\ \hline \end{array}$$

$1.046 + .87 + .9 + 4 =$

## Subtraction

$$\begin{array}{r} .9 \\ -\ .4 \\ \hline \end{array} \qquad \begin{array}{r} 128.9 \\ -\ 19.8 \\ \hline \end{array}$$

$216.5 - 19 =$ $137 - 15.8 =$

## Multiplication

$$\begin{array}{r} .4 \\ \times\ .9 \\ \hline \end{array} \qquad \begin{array}{r} 1.5 \\ \times\ .9 \\ \hline \end{array} \qquad \begin{array}{r} .025 \\ \times\ .3 \\ \hline \end{array}$$

$$\begin{array}{r} .15 \\ \times\ .06 \\ \hline \end{array} \qquad \begin{array}{r} .004 \\ \times\ .03 \\ \hline \end{array} \qquad \begin{array}{r} 3.5 \\ \times\ 2.4 \\ \hline \end{array}$$

# II

## Division

$.5\overline{).25}$

$15\overline{)2.25}$

$1.2\overline{)48}$

$.15\overline{)75}$

Appendix Z
ABE Curriculum Materials and Instructional Equipment

A partial listing of Adult Basic Education (ABE) curriculum materials and instructional equipment used in the Planters Employee Training (PET) Program. List includes the most frequently used materials and equipment in which the trade terminology and trade math are incorporated.

| TITLE | COMPANY |
|---|---|
| *New Streamlined English Series*<br><br>*News for You - Edition B* | New Readers Press<br>Box 131, 1320 Jamesville Ave.<br>Syracuse, NY 13210 |
| Language Master System | Bell and Howell<br>Audio-Visual Products Division<br>7100 N. McCormick Road<br>Chicago, IL 60645 |
| *TUTOR* | Literacy Volunteers of America, Inc.<br>Midtown Plaza, 6th Floor<br>700 East water Street<br>Syracuse, NY 13210 |
| *No Frill Math Drill*<br>Spirit Duplicating Books<br>No. 1911-1920 | Instructo/McGraw Hill<br>Cedar Hollow Road<br>Paoli, PA 19301 |
| *Basic Skills with Whole Numbers* | Cambridge Book Company<br>Adult Education Department<br>888 Seventh Avenue<br>New York, NY 10106 |
| *Math in Daily Living*<br>Books 1,2 and 3<br><br>*Working with Numbers - Rectangle* | Steck-Vaughn Company<br>P.O. Box 2028<br>Austin, Texas 78768 |